

**FINAL RCRA HAZARDOUS WASTE OPERATIONAL AND POST CLOSURE CARE**  
**PERMIT**

Permittee: **Union Carbide Caribe, L. L. C. (UCCLLC)**  
**Subsidiary of the Dow Chemical Company**  
**Road #127; Km 17. 3**  
**Tallaboa Ponienta**  
**Penuelas, Puerto Rico 00624**

Facility Location: **Road #127; Km 17. 3**  
**Tallaboa Ponienta**  
**Penuelas, Puerto Rico 00624**

EPA Facility I.D. Number: **PRD980594618**

Effective Date: \_\_\_\_\_

Expiration Date: \_\_\_\_\_

This permit is issued by the United States Environmental Protection Agency ("EPA") to Union Carbide Caribe, L.L.C. (the "Permittee"), under the authority of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976 (RCRA), Subtitle C, and the Hazardous and Solid Waste Amendments of 1984 ("HSWA"), 42 U.S.C. §§ 6921-6939e (referred to collectively as "RCRA"), and EPA regulations thereto. This is a RCRA hazardous waste operational and post-closure care permit which addresses the operation of one industrial landfill and one surface impoundment, the closure of several tanks, storage and ground burner areas, and the post-closure of three surface impoundments at a former petrochemical complex (the "Facility") owned and operated by the Permittee at Penuelas, Puerto Rico.

The Permittee must comply with the terms of this Permit, which include requirements to:

- 1) Maintain and operate a groundwater monitoring system at the Facility capable of detecting any releases of hazardous waste or hazardous constituents from Hazardous wastes management units
- 2) Operate Surface Impoundment 2, in conformance with the requirements of 40 CFR Part 264, Subpart K;
- 3) Operate the Facility's industrial landfill in conformance with the requirements of 40 CFR Part 264, Subpart N;
- 4) Close and provide post-closure care for the Facility's Surface impoundments 1,5,6 in conformance with the requirements of 40 CFR Part 264, Subpart G;

- 5) Close the Facility's tanks, groundburner and storage areas in conformance with the requirements of 40 CFR Part 264, Subpart G;
- 6) Determine the nature, extent, and rate of migration of hazardous waste or hazardous constituent releases, if any, in soils, groundwater, surface water, subsurface gas and/or air, at specified solid waste management units at the Facility regardless of the time waste was placed in such units, and to develop and implement appropriate corrective action for such releases from solid waste management units, and to conduct investigations of specified areas of concern, and to develop and implement appropriate corrective actions for these areas of concern, if necessary; and
- 7) Comply with other applicable statutory or regulatory requirements imposed pursuant to RCRA.

The Permittee must comply with all the terms and conditions of this permit. This permit consists of the conditions contained in Modules I through IX, including the attachments to those modules and the applicable regulations contained in 40 CFR Parts 124, 260 through 265, 268, 270 and 279. Applicable regulations are those which are in effect on the date of issuance of this permit. A permit may be modified, pursuant to 40 CFR § 270.41(a)(3) and 40 CFR § 270.32(c), however, to incorporate new regulations. All documents referred to in the permit are incorporated into the permit by reference.

The issuance of this permit is based on the assumption that the information provided in the Permittee's Part B permit renewal application (the "Application"), submitted by the Permittee on April 26, 1993, and all succeeding revisions and addenda, is accurate. The Permittee's failure in the Application or during the permit issuance process to disclose fully any relevant fact, or the Permittee's misrepresentation of any relevant fact at any time may be grounds for the termination, revocation and reissuance, or modification of this permit pursuant to 40 CFR §§ 270.41, 270.42 and 270.43, and for potential enforcement action. The Permittee must inform EPA of any deviation from or changes in any information submitted which would affect the Permittee's ability to comply with the applicable statutes, regulations or permit conditions.

The permit shall remain in effect until the above referenced termination date, unless revoked and reissued, modified, or terminated in accordance with 40 CFR §§ 270.41, 270.42, or 270.43, or continued in accordance with 40 CFR § 270.51(a). Land disposal units shall be reviewed five years after the date of permit issuance and the permit shall be modified as necessary. 40 CFR § 270.50.

Walter Mugdan, Acting Director  
Division of Environmental Planning  
and Protection  
U.S. Environmental Protection Agency  
Region 2

Date

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## **MODULE I - STANDARD CONDITIONS**

- A. **EFFECT OF PERMIT.** This Permit authorizes the management of hazardous wastes expressly described in this Permit and also authorizes the post-closure care for the closed hazardous waste management units listed in permit condition VII.B. This permit does not authorize any other hazardous waste management activities. Compliance with the terms of this Permit constitutes compliance, for purposes of enforcement, with the requirements of Subtitle C ("Hazardous Waste Management") of RCRA, as amended by HSWA, except for those requirements not included in the permit which become effective by statute, or which are promulgated under 40 C.F.R Part 268 restricting the placement of hazardous waste in or on the land and under Subpart BB and CC of Parts 264/265 of this chapter limiting air emissions. Issuance of this Permit does not convey any property rights of any sort, or any exclusive privilege; nor does it authorize any injury to persons or property, or invasion of other private rights, or any infringement of the laws of the Commonwealth of Puerto Rico (hereafter referred to as the "Commonwealth") or local laws or regulations. Compliance with the terms of this Permit does not constitute a defense to any action brought under Sections 3013, 3008(h) and/or Section 7003 of RCRA, 42 U.S.C. §6934, §6928(h) and/or §6973; Sections 104, 106(a), 107 and/or 122 of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 ("CERCLA"), as amended, 42 U.S.C. §9601(a) et seq., or any other law, and applicable regulations, other than those excepted by 40 CFR §270.4, governing protection of public health or the environment.
- B. **PERMIT ACTIONS.** This Permit may be modified, revoked and reissued, or terminated for cause as specified in 40 CFR §270.41, §270.42 and §270.43. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes or anticipated noncompliance on the part of Union Carbide Caribe L.L.C. (the "Permittee") does not stay the applicability or enforceability of any condition of this Permit (40 CFR §270.30(f)). Review of any application for a Permit renewal shall involve consideration of improvements in the state of control and measurement technology, as well as changes in applicable regulations. [Section 3005(c)(3) of RCRA, 42 U.S.C. §6925(c)(3)]
- C. **PERMIT CONDITIONS.** Pursuant to Section 3005(c)(3) of RCRA, 42 U.S.C. §6925(c)(3), promulgated as regulation at 40 CFR §270.32(b), this Permit contains those terms and conditions the Administrator determines necessary to protect human health and the environment. If not otherwise specified in this permit, all the requirements of 40 CFR §270.30, §270.31, §270.32 and §270.33 are hereby incorporated into this Permit by reference.

D. PERMIT SUBMITTALS.

1. Effect of Permit. All plans, reports and schedules required by the terms of this Permit are, unless otherwise specified, upon approval by EPA, incorporated by reference into this Permit. Upon incorporation, the provisions of each such document shall be binding upon the Permittee and have the same legal force and effect as the requirements of this Permit.
2. Submittal Modification. The Permittee shall submit plans and reports required by this Permit to the Agency for review and comment. Unless otherwise specified, the Agency shall review any plan, report, specification, or schedule submitted pursuant to, or required by this Permit, and provide its written approval/disapproval, comments and/or modifications to the Permittee. Unless otherwise specified by the Agency, the Permittee shall submit a revised proposal within thirty (30) days of its receipt of the EPA's written comments and/or modifications. EPA shall grant or deny any such request for an extension. Any revised proposal submitted by the Permittee shall incorporate the EPA's comments and/or modifications. EPA will then approve the revised proposal or modify the proposal and approve it with any such modifications. The revised proposal, as approved by EPA, shall become final. All final approvals shall be given to the Permittee in writing.

- E. SEVERABILITY. The provisions of this Permit are severable, and if any provision of this Permit, or the application of any provision of this Permit to any circumstance is stayed or held invalid, the application of such provision to other circumstances and the remainder of this Permit shall not be affected thereby. [40 CFR §124.16(a)]

F. DUTIES AND REQUIREMENTS.

1. Duty to Comply. The Permittee shall comply with all conditions of this Permit, except that the Permittee need not comply with the conditions of this Permit to the extent and for the duration such noncompliance is authorized by an emergency permit (see 40 CFR §270.61). Any noncompliance with this Permit, except under the terms of an emergency permit, constitutes a violation and is grounds for: 1) enforcement action; 2) Permit termination, revocation and reissuance, or modification; and/or 3) denial of a Permit renewal application. [40 CFR §270.30(a)]
2. Duty to Reapply. If the Permittee wishes to continue an activity regulated by this Permit

after the expiration date of this Permit, the Permittee shall submit a complete application for a new Permit at least 180 days before this Permit expires, unless the Regional Administrator grants permission for a later date, which date shall not be later than the expiration date of the existing Permit. [40 CFR §270.10(h) and §270.30(b)]

3. Permit Expiration and Continuation. Unless modified pursuant to Condition J of this module, this Permit will be in effect for the time period, which must not exceed ten (10) years. However, EPA shall review the permit provisions relating to land disposal five years after the date of permit issuance and shall modify those provisions as necessary. As set forth in 40 CFR §270.51, as long as EPA is the Permit issuing authority, this Permit and all conditions herein will remain in effect beyond the Permit's expiration date if the Permittee has submitted a timely, complete application (40 CFR Part 270 Subpart B) and through no fault of the Permittee, the Director has not issued a new Permit with an effective date established in accordance with 40 CFR §124.15.

If the Commonwealth, at the time of permit renewal, has permitting authority under 40 CFR Part 271 and if the Permittee has submitted a timely and complete application under Commonwealth law and regulations, the terms and conditions of this Permit continue in force beyond the expiration date of the Permit, but only until the effective date of the Commonwealth's issuance or denial of a Commonwealth Permit. [40 CFR §270.51(d)]

4. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for the Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. [40 CFR §270.30(c)]
5. Duty to Mitigate. In the event of noncompliance with this Permit, the Permittee shall take all reasonable steps to minimize releases to the environment, and shall carry out such measures as are reasonable to prevent significant adverse impacts on human health or the environment. [40 CFR §270.30(d)]
6. Proper Operation and Maintenance. The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this Permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate sampling, laboratory and process controls, including appropriate quality

assurance/quality control ("QA/QC") procedures. This provision requires the operation of backup or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of the Permit. [40 CFR §270.30(e)]

7. Duty to Provide Information. The Permittee shall furnish to the Director, within a reasonable time, any relevant information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The Permittee shall also furnish to the Director, upon request, copies of records required to be kept by this Permit. [40 CFR §270.30(h) and §264.74(a)]
8. Inspection and Entry. The Permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:
  - (a) Enter at reasonable times upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this Permit;
  - (b) Have access to and copy, at reasonable times, any records that must be kept under the conditions of this Permit;
  - (c) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Permit; and
  - (d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized, any substances or parameters at any location. [40 CFR §270.30(i) and §264.74(a)]
9. Monitoring and Records.
  - (a) Representativeness of Samples and Measurements. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. [40 CFR §270.30(j)]. The method used to obtain a representative sample of the waste to be analyzed must be the appropriate method from Appendix I of 40 CFR Part 261 or an equivalent sampling

method approved by the Director. 40 CFR §261.20(c). Laboratory methods must be those specified in Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (EPA Publication SW-846, Third Edition, 1987, as amended), and Standard Methods for the Examination of Water and Waste Water (16th Edition, 1985), or an equivalent method approved by the Director, as specified in the Waste Analysis Plan in Attachment II-1 to this Permit. [40 CFR §270.6]

- (b) Retention of Records. The Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports and records required by this Permit, and the certification required by 40 CFR §264.73(b)(9) and record of all data used to complete the application for this Permit for a period of at least three (3) years from the date of the sample, measurement, report, certification, or application. These periods may be extended by request of the Regional Administrator at any time. The Permittee shall maintain records from all groundwater monitoring wells and associated groundwater surface elevations, for the active life of the facility, and for disposal facilities for the post-closure care period as well. [40 CFR §270.30(j)(2)]
- (c) Content of Monitoring Records. Records of monitoring information shall specify:
  - (i) The date(s), exact place, and time of sampling or measurements;
  - (ii) The individual(s) who performed the sampling or measurements;
  - (iii) The date(s) analyses were performed;
  - (iv) The individual(s) who performed the analyses;
  - (v) The sampling techniques or methods used;
  - (vi) The analytical techniques or methods used; and

- (vii) The results of such analyses. [40 CFR §270.30(j)]
- (d) Quality Assurance Program. The Permittee shall conduct a quality assurance program to ensure that the monitoring data are technically accurate and statistically valid. The quality assurance program shall be in accordance with Section 10 of Test Methods for Evaluating Solid Waste: Physical/Chemical Methods (EPA Publication SW-846, Third Edition, 1987, as currently amended), or with the requirements or EPA's most current statement of work for the National Contract Laboratory Program, and EPA Region 2's CERCLA Quality Assurance Manual (Revision 1, October 1989, as currently amended), and the most current Standard Operating Procedure, Functional Guidelines for Evaluating Organics Analyses, and the most current Standard Operating Procedure, Evaluation of Metals Data for the Contract Laboratory Program, or an EPA-approved quality assurance program as specified in the Waste Analysis Plan in Permit Attachment II-1 to this Permit.
- (e) Monitoring Reports. Monitoring results must be reported at the intervals specified elsewhere in this Permit. [40 CFR §270.30 (l)(4)]
10. Reporting Planned Changes. The Permittee shall give notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted facility, which would affect the Permittee's operation or activities under this permit. [40 CFR §270.30(l)(1)]
11. Anticipated Noncompliance. The Permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with this Permit's requirements. This notice must include a description of all incidents of noncompliance reasonably expected to result from the proposed changes. [40 CFR §270.30(l)(2)]
12. Transfer of Permit. This Permit is not transferable to any person or corporation unless notice has been given to the Director and the Permit has been modified, or revoked and reissued, or a modification made to identify the new Permittee and to incorporate such other requirements as may be necessary. [40 CFR §270.30(l)(3) and §270.40]
13. Compliance Schedules. See specific permit conditions.

14. Immediate Reporting of Releases.

- (a) Whenever there is an imminent or actual emergency situation, the emergency coordinator, as designated in the contingency plan, or his designee when the emergency coordinator is on call, must immediately:
  - (i) Activate internal facility alarms or communication systems, where applicable, to notify all facility personnel; and
  - (ii) Notify appropriate Commonwealth or local agencies with designated response roles if their help is needed [40 CFR §264.56(a)(1) and (2)]
- (b) If the emergency coordinator determines that the facility has had a release, fire, or explosion which could threaten human health, or the environment, outside the facility, he must report his findings as follows:
  - (i) If his assessment indicates that evacuation of local areas may be advisable, he must immediately notify appropriate local authorities. He must be available to help appropriate officials decide whether local areas should be evacuated; and
  - (ii) He must immediately notify either the government official designated as the on-scene coordinator for that geographical area, or the National Response Center (using their 24-hour toll free number 800/424-8802). The report must include:
    - a. Name and telephone number of reporter;
    - b. Name and address of facility;
    - c. Time and type of incident (e.g., release, fire);
    - d. Name and quantity of material(s) involved, to the extent known;
    - e. The extent of injuries, if any; and
    - f. The possible hazards to human health, or the environment,

outside the facility. [40 CFR §264.56]

15. Twenty-four Hour Reporting.

- (a) The Permittee shall report to the Director any noncompliance with this permit which may endanger human health or the environment. Any such information shall be reported orally within 24 hours from the time the Permittee becomes aware of the circumstances. This report shall include the following:
  - (i) Information concerning the release of any hazardous waste or hazardous constituent which may cause an endangerment to public drinking water supply sources;
  - (ii) Any information of a release or discharge of hazardous waste, or of a fire or explosion at the facility, which could threaten the environment or human health outside the facility;
- (b) The description of the occurrence and its cause, as reported pursuant to subparagraph 15(a) immediately above shall include:
  - (i) Name, address and telephone number of the owner or operator;
  - (ii) Name, address, and telephone number of the facility;
  - (iii) Date, time, and type of incident;
  - (iv) Name and quantity of material(s) involved;
  - (v) The extent of injuries, if any;
  - (vi) An assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
  - (vii) Estimated quantity and disposition of recovered material that resulted from the incident. [40 CFR §270.30(l)(6)].

- (c) A written submission shall also be provided to the Director within five (5) calendar days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance (including exact dates and times); whether the noncompliance has been corrected; and if the noncompliance has not been corrected, the anticipated time it is expected to continue and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. The Permittee need not comply with the five day written notice requirement if the Director waives that requirement and the Permittee submits a written report within fifteen (15) calendar days of the time the Permittee becomes aware of the circumstances. [40 CFR §270.30(l)(6)(iii)]

The oral reports required above may be made by contacting the EPA Region II 24-hour Emergency Response Center, at (732) 548-8730, or any designated telephone number which may subsequently replace it.

16. Unmanifested Waste Report. [Not Applicable]
17. Manifest Discrepancy Report. [Not Applicable]
18. Biennial Report. The Permittee shall prepare and submit a biennial report covering facility activities. This report shall be submitted by March 1 of each even numbered calendar year and shall contain all of the information required by 40 CFR §264.75 and 40 CFR §270.30(l)(9).
19. Additional Noncompliance Reporting. The Permittee shall report all instances of noncompliance (including release of hazardous waste, fire, or explosion) not required to be reported under Permit Conditions I.F.9, I.F.14 or I.F.15. Such noncompliance shall be reported for each calendar quarter (i.e., January through March and each subsequent quarter) by no later than 30 days after the end of the quarter. The reports shall contain the information listed in Permit Condition I.F.15.(b), and all other relevant information. [40 CFR §270.30(l)(10)]
20. Other Information. Whenever the Permittee becomes aware that it failed to submit any relevant facts in the Permit application, or submitted incorrect information in a permit application, or in any report to the Regional Administrator or the Director, the Permittee

shall promptly submit such facts or information to the Regional Administrator. [40 CFR §270.30(l)(11)]

- G. SIGNATORY REQUIREMENT. All applications, reports or other information submitted to the Regional Administrator or the Director shall be signed and certified as required by 40 CFR §§ 270.11 and 270.30(k).
- H. CONFIDENTIAL INFORMATION. The Permittee may claim confidential any information required to be submitted by this permit in accordance with 40 CFR §270.12 and 40 CFR Part 2, Subpart B.
- I. DOCUMENTS TO BE MAINTAINED AT THE FACILITY. In addition to a copy of this Permit and any amendments, revisions, or modifications to the Permit and its attachments, the following information must be recorded, as it becomes available, and maintained in the operating record until closure of the facility, except as noted.

A copy of the written operating record that was prepared in accordance with 40 CFR §264.73. This operating record shall include, at a minimum, the following information:

1. The location of each hazardous waste within the facility and the quantity at each location.
2. A copy of the waste analysis plan that was prepared in accordance with 40 CFR §264.13(b).
3. Records and results of waste analyses performed as specified in 40 CFR §264.13, §264.17, §264.272, §264.278, §268.4(a), and §268.7.
4. Summary reports and details of all incidents that require implementation of the contingency plan as specified in 40 CFR §264.56(j).
5. A copy of the written inspection plan and schedule prepared in accordance with 40 CFR §264.15(b) must be kept for the duration of the Permit.
6. Records and results of inspections as required by 40 CFR §264.15(d), §264.174, §264.226 and §264.279.

7. Personnel training documents and records that demonstrate continuous compliance with the requirements of 40 CFR §264.16(d).
  8. A current copy of the contingency plan and all revisions to the plan, as required by 40 CFR §264.53(a).
  9. Written closure plans and post-closure plans, as required by 40 CFR §264.112(a) and §264.118(a).
  10. A copy of the latest closure and post-closure cost estimate prepared in accordance with 40 CFR §264.142(a) and (c) and §264.144(a) and (c) and, when these estimates have been adjusted in accordance with 40 CFR §264.142(b) and §264.144(b), the latest adjusted closure and post-closure cost estimates, as required by 40 CFR §264.142(d) and §264.144(d).
  11. Monitoring, testing, or analytical data where required by 40 CFR Part 264, Subparts F, J, K, M, O, AA, BB and CC.
  12. Records and results of waste analyses required by other parts of this permit (40 CFR §264.73(b)(3)) to demonstrate compliance with the requirements of 40 CFR Part 268 (Land Disposal Restrictions).
- J. PERMIT MODIFICATIONS. The Permit may be modified as allowed under 40 CFR §270.41 and §270.42. Modifications to this Permit may be made by the Director for cause in accordance with 40 CFR §270.41. Modifications to the Permit may also be requested by the Permittee as is provided for in 40 CFR §270.42.
- K. REPORTS, NOTIFICATIONS AND SUBMITTALS TO THE REGIONAL ADMINISTRATOR. All reports, notifications or other submittals required by this Permit are to be submitted to the Director and sent certified mail or hand delivered to:

U.S. Environmental Protection Agency, Region II  
Kathleen C. Callahan, Director  
Division of Environmental Planning & Protection  
290 Broadway, 25<sup>th</sup> Floor  
New York, New York 10007-1866

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U.S. Environmental Protection Agency, Region II  
Raymond Basso, Chief  
RCRA Programs Branch  
290 Broadway, 22<sup>nd</sup> Floor  
New York, New York 10007-1866

U.S. Environmental Protection Agency, Region II  
RCRA Record Center, Room 1538  
290 Broadway, 15<sup>th</sup> Floor  
New York, New York 10007-1866

L. DEFINITIONS. For the purpose of this Permit, terms used herein shall have the same meaning as those set forth in 40 CFR Parts 260 through 270, unless this Permit specifically states otherwise. Where terms are not otherwise defined, the meaning associated with such terms shall be defined by a standard dictionary reference or the generally accepted scientific or industrial meaning of the term.

1. Area of Concern (AOC). Pursuant to the authority granted by Section 3005(c)(3) of RCRA and 40 C.F.R. § 270.32(b)(2), an area of concern is hereby defined for purposes of this permit to mean an area at the facility (other than a waste management unit) or an area off-site impacted by migration of contamination from the Facility, where hazardous waste and/or hazardous constituents are present or are suspected to be present as a result of a release from the Facility. The term shall include area(s) of potential or suspected contamination as well as actual contamination. Such area(s) may require investigation and a determination of what, if any, corrective action may be necessary based on investigation results which show a potential or actual threat to human health and the environment.

2. Director. The Director of the Division of Environmental Planning and Protection, United States Environmental Protection Agency Region II, or the designee, authorized representative, or successor to such Director.

3. EPA. The United States Environmental Protection Agency, including Region II.

4. Facility means all contiguous land and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combination of them).

5. Hazardous constituents means those constituents listed in Appendix VIII to 40 CFR Part

261 and Appendix IX 40 CFR Part 264.

6. Hazardous waste means a hazardous waste as defined in 40 CFR §261.3 or Section 1004 of RCRA.

7. Regional Administrator is the Regional Administrator of the United States Environmental Protection Agency for Region II, his or her designee or authorized representative.

8. Release for purposes of this Permit includes, but is not limited to, any spilling, leaking, pumping, pouring, emitting, emptying, discharging, injecting, escaping, leaching, dumping, or disposing into the environment of any hazardous waste or hazardous constituent, unless expressly authorized under the terms of this Permit.

9. Solid Waste Management Unit ("SWMU"). A SWMU includes any waste management unit from which hazardous constituents have migrated or may migrate, irrespective of whether the unit was intended for the management of hazardous or solid wastes (as those terms are defined in §1004(5) and (27) of RCRA, 42 U.S.C. §6903(5) and (27) and the regulations promulgated pursuant to RCRA, 40 CFR §261.2 and §261.3). These units include, but are not limited to: landfills, surface impoundments, waste piles, land treatment units, tanks, elementary neutralization units, transfer stations, container storage areas, incinerators, injection wells, recycling units, and closed and abandoned units. Any area which have become contaminated as a result of routine and systematic releases of hazardous or nonhazardous waste, or hazardous constituents may also be considered a SWMU.

M. DISPUTE RESOLUTION.

1. The Permittee shall use its best effort in good faith to resolve informally all disputes or differences of opinion, which may arise in connection with this permit. Such informal dispute resolution may include meeting with EPA staff, written submissions of information or relevant arguments and other oral or written exchange of views between Permittee and EPA staff.
2. If disputes arise which cannot be resolved informally as described in (1), immediately above, the procedures set forth in this subparagraph shall be followed by the Permittee in formally obtaining resolution. The Permittee shall notify the Director in writing of any such dispute(s). Within thirty (30) calendar days of such notification, the Permittee shall have the right to submit a written statement to the Director, which shall set forth the Permittee's specific points of contention, the Permittee's argument and evidence, and any additional material that the Permittee considers necessary or relevant for a proper

determination of the matter. Effort to resolve the dispute(s) informally may continue between the Permittee and EPA staff subsequent to the Permittee's written submission to the Director. If the dispute(s) cannot be resolved informally within sixty (60) calendar days of the receipt of Permittee's written submission to the Director, the Director will provide Permittee a final decision in writing on the dispute(s), which decision shall set forth the Director's reasons for the decision. The Director's decision shall be the resolution of the dispute(s), shall be incorporated into the Permit and shall be implemented by the Permittee.

3. For purposes of this paragraph (Module I..M) the term "Director, shall mean only the Director of the Division or anyone formally acting in the Director's absence.
4. EPA will extend the schedule for performing any elements of work materially affected by the good faith invocation of the dispute resolution process pursuant to this Paragraph

## **MODULE II - GENERAL FACILITY CONDITIONS**

- A. **DESIGN AND OPERATION OF FACILITY.** The Permittee shall maintain and operate the facility to minimize the possibility of a fire, explosion, or any unplanned sudden or non-sudden release of hazardous waste constituents to air, soil, or surface water which could threaten human health or the environment.

The Permittee is authorized to store, treat or dispose of hazardous wastes pursuant to Permit Conditions IV.B.1 and V.B.1. The Permittee is also authorized to store, treat or dispose of compatible non-hazardous waste as identified in Permit Condition IV.B.3 and as specified in Section G of this module.

- B. **PROHIBITION ON RECEIPT OF OFF-SITE WASTES.** The Permittee is not allowed to receive hazardous waste from an off-site source.

- C. **GENERAL WASTE ANALYSIS.**

1. The Permittee shall follow the procedures described in the Waste Analysis Plan, included as Permit Attachment II-1 to this permit, and conduct a quality assurance program as specified in Permit Condition I.F.9(d).
2. The Permittee shall verify its waste analysis as part of the quality assurance program. The quality assurance program will be in accordance with current EPA practices (Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, Third Edition, as currently amended, and the data validation procedures as established by the Director) or equivalent methods approved by the Director, and at a minimum, ensure that the Permittee maintains properly functioning instruments, uses approved sampling and analytical methods, as specified in 40 CFR Part 261, Appendices I, II and III, assures the validity of sampling and analytical procedures, and performs correct calculations.
3. At a minimum, the Waste Analysis Plan must include the following:
  - (a) The parameters to be analyzed for each hazardous waste, and the rationale for the selection of these parameters, as required by 40 CFR §264.13(b)(1);

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- (b) The test methods which will be used to test for these parameters, as required by 40 CFR §264.13(b)(2);
  - (c) The sampling method(s) which will be used to obtain a representative sample of the waste to be analyzed, as required by 40 CFR §264.13(b)(3); and
  - (d) The frequency with which the initial analysis of the waste will be reviewed or repeated to ensure that the analysis is accurate and up to date, as required by 40 CFR §264.13(b)(4).
4. The Permittee shall comply with the land disposal restriction provisions of 40 CFR Part 268 and Module IX of this permit by testing its waste or an extract developed using the test method described in Appendix I of 40 CFR Part 268, or by using knowledge, based on documentation in the Permittee's records, of the waste to determine if the waste is restricted from land disposal.
- (a) Waste which is determined to be restricted under 40 CFR 268, based on analysis or knowledge of the waste, will not be disposed of on-site unless it meets the applicable treatment standard, or is otherwise expressly permitted by this permit.
  - (b) If the Permittee determines that it is managing a restricted waste which must be sent off site for treatment or disposal, and the waste exceeds the applicable treatment standards, for each new shipment of the restricted waste the Permittee must notify the treatment facility in writing of the appropriate treatment standard set forth in Subpart D of 40 CFR Part 268. If the facility routinely ships the same waste type to the same facility the Permittee is only required to send the notification form once. The notice must include the following information:
    - (i) EPA Hazardous Waste Number;
    - (ii) The corresponding treatment standards;
    - (iii) The manifest number associated with the shipment of waste; and
    - (iv) Waste analysis data, where available.

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(c) If the Permittee determines that it is managing a restricted waste, which must be sent off-site for treatment or disposal, and the Permittee determines that the waste can be land disposed without further treatment, for each shipment of the restricted waste it must submit, to the land disposal facility, a notice and a certification stating that the waste meets applicable treatment standards. For the same type waste shipped to the same facility the Permittee is only required to complete the notice and certification form once, the first time the waste is shipped,

(i) The notice must include the following information:

- a. EPA Hazardous Waste Number;
- b. The corresponding treatment standards;
- c. The manifest number associated with the shipment of wastes.
- d. Waste analysis data, where available.

(ii) The certification must be signed by an authorized representative and must state the following:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 CFR Part 268, Subpart D and all applicable prohibitions set forth in 40 CFR 268.32 or RCRA section 3004(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

(d) If the Permittee determines whether the waste is restricted based solely on his knowledge of the waste, all supporting data used to make this determination must be maintained on-site in the Permittee's files.

5. The Permittee shall comply fully with the Waste Analysis Plan, (Attachment II-1), including the provisions listed below:

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- (a) Whenever changes in plant processes alter the wastes generated, or affect the manner in which a specific waste is managed, the Permittee shall review and, if necessary, amend the Waste Analysis Plan and obtain a permit modification pursuant to 40 CFR §270.42.
- (b) The Permittee shall maintain records that provide a detailed chemical and physical analysis of a representative sample of each waste. However, when a specific process generates a waste stream instead of an individual waste, a detailed chemical and physical analysis of a representative sample of such waste stream will be sufficient to comply with this requirement. At a minimum, the analysis shall contain all the information which must be known to treat, store, or dispose of the waste pursuant to 40 CFR Parts 124, 261, 262, 264, 268, and 270.
- (c) The Permittee shall repeat any waste analysis as necessary to ensure that it is accurate and up to date. At a minimum, an analysis shall be repeated when the Permittee is notified, or has reason to believe, that a process or operation generating a hazardous waste has changed, unless the change will not result in a change in the chemical or physical makeup of the relevant waste material.
- (d) The Permittee shall keep a copy of the Waste Analysis Plan at the facility in accordance with the requirements of Permit Condition I.I. of this permit.

D. SECURITY. The Permittee shall comply with the security provisions of 40 CFR §26.4.14 and follow the security plan outlined in Permit Attachment II-2. At a minimum, the Permittee shall:

- 1. Provide a 24-hour site patrol system which frequently monitors and controls entry onto the active portions of the facility; or
- 2. Provide the following controls:
  - (a) An artificial or natural barrier which completely surrounds the active portions of the facility; and
  - (b) A means to control entry, at all times, through the gates or other entrances to the facility. [40 CFR §264.14(b)].

3. The Permittee shall post and maintain a warning sign with the legend, "DANGER-- Unauthorized Personnel Keep Out," at each entrance to the active portion of a facility, and at other locations, in sufficient numbers to be seen from any approach to the active portion. The legend must be written in both English and Spanish and be legible from a distance of at least 25 feet. Existing signs, at the time of permit issuance, with a different legend may be used only if the legend on the sign indicates that only authorized personnel are allowed to enter the active portion, and that entry onto the active portion can be dangerous. [40 CFR §264.14(c)].
- E. GENERAL INSPECTION REQUIREMENTS The Permittee shall follow the inspection plan and schedule included as Permit Attachment II-2 to this permit and demonstrate continuous compliance with 40 CFR §264.15. The Permittee shall remedy any deterioration or malfunction discovered by an inspection as required by 40 CFR §264.15(c). The Permittee shall use inspection log forms that include, at a minimum, the information in the example log forms provided in Permit Attachment II-3. All inspection logs shall be signed and dated by the individual performing the inspection, and placed into the operating log. Records of inspections shall be kept as required by 40 CFR §264.15(d). At a minimum, this inspection schedule must include the following:
1. Inspecting monitoring equipment, safety and emergency equipment, security devices, loading and unloading areas, and operating and structural equipments that are important for preventing, detecting, or responding to environmental or human health hazards, as required by 40 CFR §264.15(b)(1);
  2. The schedule must identify the types of problems which are to be looked for during the inspection, as required by 40 CFR §264.15(b)(3);
  3. The frequency of inspection shall be based on the rate of possible equipment deterioration and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. The frequency for inspecting the monitoring, safety, emergency, operating and structural equipment emergency equipment, and security devices listed in Permit Attachment II-2. The emergency, safety and spill response equipment listed in the above attachment, shall be inspected daily when in use and weekly on a routine basis. Areas subject to spills, such as loading and unloading areas must be inspected daily when in use as required by 40 CFR §264.15(b)(4); and

4. The specific remedy to be implemented when inspections disclose problems.
- F. PERSONNEL TRAINING. The Permittee shall conduct personnel training as required by 40 CFR §264.16(a), (b) and (c). This training program shall follow the attached outline in Permit Attachment II-4 to this Permit, including the training content, training frequency and technique specified in this attachment. At a minimum, the positions listed in this attachment must receive the training specified (individuals specified may change). The Permittee shall maintain training documents and records as required by 40 CFR §264.16(d) and (e). Training documentation must be similar to the documentation specified in this attachment. At a minimum, the training program must include the following:
1. The program must be directed by individuals who are trained in hazardous waste management procedures, and emergency response procedures. The program must include instructions that teach facility personnel hazardous waste management procedures relevant to the positions in which they are employed, as required by 40 CFR §264.16(a)(2);
  2. As required by 40 CFR §264.16(a)(3), the training program must be designed to ensure that facility personnel are able to respond effectively to emergencies by familiarizing them with emergency procedures, emergency equipment, and emergency systems, including, where applicable:
    - (a) Procedures for using, inspecting, repairing, and replacing Facility emergency and monitoring equipment;
    - (b) Key parameters for automatic waste feed cut-off systems;
    - (c) Communications or alarm systems;
    - (d) Response to fires or explosions;
    - (e) Response to groundwater contamination incidents; and
    - (f) Shut-down of operations.
  3. In accordance with 40 CFR §264.16(b) and (c), provisions to ensure that:

- (a) Facility personnel must successfully complete the program required by 40 CFR §264.16(a) within six (6) months after the date of their employment or assignment to a Facility, or to a new position at the Facility, whichever is later;
- (b) Employees do not work in unsupervised positions until they have completed the training requirements of 40 CFR §264.16(a); and
- (c) Facility personnel take part in an annual review of the initial training required by 40 CFR §264.16(c).

G. GENERAL REQUIREMENTS FOR IGNITABLE, REACTIVE, OR INCOMPATIBLE WASTE. The Permittee shall take precautions to prevent accidental ignition or reaction of ignitable or reactive waste as required by 40 CFR §264.17. No ignitable, reactive or incompatible waste shall be placed in the active surface impoundment or landfill. The Residue Disposal order form, Permit Attachment II-3, shall be utilized to ensure proper disposal of incompatible waste. The Permittee must ensure the compatibility between all hazardous and non-hazardous waste prior to disposal. The Permittee shall also document compliance with this requirement, as required by 40 CFR §264.17(c).

H. LOCATION STANDARDS. The surface impoundments may be at least partially flooded or washed out by a 100-year storm or hurricane. The Permittee has demonstrated that there will be no adverse environmental impact due to a 100-year storm event, or a 100-year hurricane (Attachment II-8). In the event that there is a 100-year storm or hurricane which damages or washes out the impoundments, the Permittee must demonstrate to EPA's satisfaction that there was no adverse impact on the environment from any hazardous waste or hazardous constituents released from the impoundments or implement (and modify if necessary) the Contingency Plan set forth in Permit Attachment II-5 and the applicable provisions set forth in Module IV.C. of this Permit. The Permittee is required to maintain the dikes, ditches, and trenches on site used in-part to assist in the control of wash-out from the facility.

I. PREPAREDNESS AND PREVENTION.

- 1. Required Equipment. At a minimum, the Permittee shall equip the facility with the equipment set forth in the Contingency Plan, Permit Attachment II-5, the Spill/Release Reporting Procedures, Permit Attachment II-6, the Emergency Plan, Permit Attachment II-7, and the RCRA Inspection Log Forms, Permit Attachment II-3, and as required by 40 CFR §264.32.

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2. Testing and Maintenance of Equipment. The Permittee shall test and maintain the equipment specified in the previous permit condition as necessary to assure its proper operation in time of emergency, as set forth in the inspection schedule in Attachments II-2 and II-3 to this Permit, Permit Condition II.E.3, and 40 CFR §264.33.
3. Access to Communications or Alarm System. The Permittee shall maintain immediate access to the communications or alarm system as required by 40 CFR §264.34, in accordance with Permit Attachment II-2 to this permit.
4. Required Aisle Space. At a minimum, the Permittee shall maintain a 20-foot minimum aisle space, in the areas of the surface impoundment(s), and landfill to allow the unobstructed movement of personnel, fire protection equipment, spill control equipment, and decontamination equipment to those areas of the facility in an emergency as required by 40 CFR §264.35, and to provide access for daily and weekly inspections required by 40 CFR §264.226 and §264.303, and this permit.
5. Arrangements with Local Authorities. The Permittee shall maintain current arrangements with the Commonwealth and local authorities listed below as required by 40 CFR §264.37 and §264.52(c):
  - (a) Puerto Rico Firemen Department, Ponce, PR;
  - (b) Civil Defense, Penuelas, PR;
  - (c) Medical Emergency Services, Diagnostic and Treatment Center, Guayanilla, PR;
  - (d) Civil Defense, Guayanilla, PR;
  - (e) Puerto Rico Police Department, Guayanilla District; and

If the Commonwealth or local officials refuse to enter into preparedness and prevention arrangements with the Permittee, the Permittee must document this refusal in the operating record.

J. CONTINGENCY PLAN.

1. Implementation of Plan. The Permittee shall immediately carry out the provisions of the Contingency Plan (and associated attachments), Permit Attachment II-5, the Spill/Release Reporting Procedures, and the Emergency Plan, Permit Attachments II-6 and II-7, and follow the emergency procedures described by 40 CFR §264.56

whenever there is a fire, explosion, or any release of hazardous waste or hazardous waste constituents which threaten or could threaten human health or the environment.

2. Resumption of Hazardous Waste Activity. After any event requiring implementation of the contingency plan and associated attachments, the Permittee shall not resume hazardous waste management in the affected area until all equipment used during the emergency has been cleaned, recharged, or replaced, as appropriate.
3. Copies of Plan. The Permittee shall comply with the requirements of 40 CFR §264.53, which require that a copy of the Contingency Plan and all revisions to the plan must be:
  - (a) Maintained at the facility; and
  - (b) Submitted to all local police departments, fire departments, hospitals, and Commonwealth and local emergency response teams that may be called upon to provide emergency services.
4. Amendments to Plan. The Permittee shall review and immediately amend, if necessary, the contingency plan, as required by 40 CFR §264.54. The plan must be reviewed whenever:
  - (a) The facility permit is revised;
  - (b) The plan fails in an emergency;
  - (c) The facility changes in design, construction, operation, maintenance, or other circumstances in a way that materially increases the potential for fires, explosions, or releases of hazardous waste or hazardous waste constituents, or changes the response necessary in an emergency;
  - (d) The list of emergency coordinators changes;
  - (e) The list of emergency equipment changes; or
  - (f) A 100-year storm event or 100-year hurricane occurs, which results in an adverse impact to the environment contrary to the conclusions set forth in Permit Attachment

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5. Contents of Contingency Plan. The Permittee must ensure that the Contingency Plan contains the information required by 40 CFR §264.52.
  6. Emergency Coordinator. The Permittee shall comply with 40 CFR §264.55 at all times. Only qualified individuals specified in the Contingency Plan Permit Attachment II-5, may act as the Emergency Coordinator or Alternate Emergency Coordinator. The Emergency Coordinator shall be available at all times in case of an emergency, and must have the authority to commit the resources needed to carry out this plan.
  7. Emergency Procedures. The Permittee's Emergency Coordinator or the alternate Emergency Coordinator shall immediately implement the emergency procedures required by 40 CFR §264.56 whenever there is an imminent or actual emergency situation.
- K. MANIFEST SYSTEM. The Permittee shall comply with the manifest requirements of 40 CFR §264.71 and §264.72. The Permittee shall not accept for storage any hazardous waste from an off-site source.
- L. RECORDKEEPING AND REPORTING.
1. Operating Record. The Permittee shall maintain a written operating record at the Facility in accordance with the applicable portions of 40 CFR §264.73.
  2. Availability, Retention, and Disposition of Records. All records, including plans, must be made available to EPA in accordance with 40 CFR §264.74(a). The retention period for all records is extended automatically during any unresolved enforcement action regarding the Facility or as requested by the Director, as required by 40 CFR §264.74(b). A copy of records of waste disposal locations and quantities under 40 CFR §264.73(b)(2) must be submitted to the Director and local land authority upon closure of the facility as required by 40 CFR §264.74(c).
  3. Biennial Report. The Permittee shall comply with the biennial report requirements of 40 CFR §264.75, by March 1 of each even numbered year.
  4. Unmanifested Waste Report. [NOT APPLICABLE]

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5. Additional Reports. The Permittee shall comply with the additional reporting requirements set forth in 40 CFR §264.77. At a minimum, the Permittee shall report to the Director:
- (a) Releases, fires, and explosions as specified in 40 CFR §264.56(j);
  - (b) Facility closures as specified in 40 CFR §264.115; and
  - (c) As otherwise required by 40 CFR Part 264.

**MODULE III - CORRECTIVE ACTION REQUIREMENTS**  
**FOR SOLID WASTE MANAGEMENT UNITS and**  
**AREAS OF CONCERN**

A. APPLICABILITY

1. Statute and Regulations. Section 3004(u) of RCRA, 42 U.S.C. § 6924(u) and its corresponding regulations published in 40 C.F.R. § 264.101, require corrective action for all releases of hazardous wastes or constituents from any solid waste management unit ("SWMU") at a storage, treatment or disposal facility seeking a permit, regardless of the time at which waste was placed in such a unit. Section 3004(v) of RCRA, 42 U.S.C. § 6924(v), requires that corrective action be taken beyond the facility boundary, where necessary, to protect human health and the environment. Pursuant to Section 3005 (c) of RCRA, 42 U.S.C. 6925(c) and its corresponding regulations published in 40 C.F.R. § 270.32 (b)(2), the Director may impose terms and conditions as the Director determines necessary to protect human health and the environment.
2. Summary of Corrective Action Process. Corrective action implementation authorized by Section 3004(u) of RCRA, 42 U.S.C. § 6924(u), includes: (a) the RCRA Facility Assessment ("RFA"); (b) the RCRA Facility Investigation ("RFI"); and (c) Corrective Measures ("CM"). The RFA is a three-phase process that includes: (a) the Preliminary Review ("PR"); (b) the Visual Site Inspection ("VSI"); and (c) the Sampling Visit ("SV"). The PR, which must be conducted at all treatment, storage and disposal facilities seeking a RCRA permit, is a review of all available information on the individual SWMU(s). During the PR, and in subsequent phases of the RFA, all of the media (i.e., soil, groundwater, surface water, air and subsurface gas) that could potentially be impacted by the release(s) of hazardous constituents are evaluated. Based on this review, the SWMUs are characterized as to their release potentials.

Following the PR, a VSI is conducted during which all of the SWMUs, either previously or newly discovered, are observed. While performing this reconnaissance, any signs of spills or leakage, stained soil, stressed vegetation, unit deterioration, or any other conditions that may be indicative of a release are assessed. By means of these observations and the findings of the PR, EPA may require the Permittee to conduct an SV at the areas where releases are suspected.

The SV can involve any or all of the previously described media at any given SWMU. For those units where releases are clearly demonstrated in the PR and/or VSI, the SV may be omitted, as the unit(s) will be addressed subsequently in the RFI.

The last stage of the RFA involves preparing the RFA report. This report includes the findings of the various RFA activities and recommendations for further action at those units with demonstrated releases of hazardous wastes or hazardous constituents. If the RFA concludes that there is a need for further investigative work, the Permittee shall be required to pursue phase two of corrective action, an RFI. In some cases, where an immediate threat to human health or the environment exists, interim corrective measures may be required.

The purpose of the RFI is to determine the nature, extent, and rate of migration of hazardous wastes or hazardous constituents in soils, groundwater, surface water, subsurface gas and/or air, regardless of the time at which the hazardous wastes or hazardous constituents were released. Based on these multimedia analyses, the types of contaminants present, the boundaries of any contamination (e.g., those of groundwater plumes), the rate and direction of contaminant movement can be determined in each of the impacted media. Sufficient data shall be generated during the RFI to allow proper assessment of corrective measure alternatives. This may require bench and/or pilot studies to be implemented as part of the RFI. Once all these analyses are reviewed, a RFI report is prepared that provides a summation of the data and recommendations for any needed corrective measures.

If, based on information developed during the RFA, the RFI or other activities (e.g., regulated unit groundwater monitoring) EPA determines that a release or potential release of hazardous waste and/or hazardous constituents at the subject facility poses a threat or potential threat to human health or the environment, EPA may require the Permittee to implement interim corrective measures ("ICMs"), prior to Final Corrective Measures/Remedy selection and implementation. This is done to prevent or minimize the further spread of contamination, while final remedies at the facility are evaluated and/or pursued.

The culmination of the Corrective Action Program is the implementation of corrective measures. The initial stage of the corrective measures phase is the preparation of a Corrective Measures Study ("CMS"). A CMS may be required by EPA if

concentrations of hazardous constituents found at the subject facility, either in an aquifer, in surface water/sediment, in soils or in air, indicate a release has occurred which may pose a potential threat to human health and the environment. A potential threat to human health is defined by: (1) a life-time incremental cancer risk of one in a million ( $1 \times 10^{-6}$ ) for carcinogenic constituents, calculated pursuant to EPA's current risk assessment guidance or for systemic toxicants, and/or concentrations resulting in an exceedance of an established reference doses ("RfDs"), calculated using EPA's standard exposure assumptions. Alternative site-specific exposure assumptions may be utilized for risk calculations, subject to EPA's approval.

The CMS report should provide a discussion of the alternative corrective measure strategies evaluated. The report should address technical, institutional, financial, public health, and environmental issues, and the conceptual engineering. The CMS report may be limited to evaluation of a single corrective measure alternative, in addition to a no further action alternative. This may be done if, following completion of the RFI, this approach is warranted based on fully characterized site conditions, and is subject to EPA's approval. If site clean-up is the alternative action recommended by the CMS, clean-up concentration levels must be developed by the Permittee as part of the CMS.

Clean-up concentration levels shall be protective of human health and the environment, as defined above. Where available, they should be based on promulgated health-based standards, such as Maximum Contaminant Levels ("MCLs") established under the Safe Drinking Water Act, if warranted. Where promulgated standards are not warranted or available, they should be based on EPA recognized health-based levels, such as Risk-Specific Doses ("RSD") for carcinogens and RfDs for systemic toxicants, that have undergone extensive scientific review. Alternative protectiveness standards may be proposed for restricted site land usage and/or groundwater and surface water usage, subject to EPA's approval. However, pursuant to § 264.90, all corrective actions concerning groundwater releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR § 264.100. The CMS report should provide a discussion of the alternative corrective measure strategies evaluated, addressing technical, institutional, engineering and cost issues, and the level of protectiveness of human health and the environment afforded by each alternative. The Permittee shall recommend the proposed corrective measure remedy based on the alternatives evaluated in the CMS.

The CMS shall address alternative remediation strategies that are technologically feasible and reliable, and which effectively mitigate and minimize damage to, and provide adequate protection of, human health and the environment. Extensive evaluation of a number of remedial alternatives may not be necessary in cases where the remedy alternative is straightforward, or where few alternatives exist. In such cases, the Permittee may submit a limited scope of the CMS.

Following completion of the CMS, EPA will evaluate the acceptability and protectiveness of the corrective measure(s) recommended by the Permittee, as well as other alternatives evaluated in the CMS. EPA will then designate the corrective measure selected as the remedy, and initiate a permit modification to require implementation of the selected corrective measure(s). Subsequent to the permit modification, the owner or operator of the facility will be required to demonstrate financial assurance for completing the designated corrective measure(s).

Permit modification for the approved corrective measure(s) will initiate the final stage of corrective measures, the Corrective Measures Implementation ("CMI"). The CMI will address the final design, construction, operation, maintenance, and monitoring of the corrective measure or measures selected.

The RFA for the Permittee's facility (the "Facility") was completed in 1986 and revised on February 1, 1988. The 1986 RFA identified 32 SWMUs. Subsequently, four additional SWMUs were identified.

3. Solid Waste Management Units

a. The conditions of this Module apply to:

- (1) All the SWMUs listed below where either an RFI, CMS, CMI, or ICM have indicated that corrective action is required; and
- (2) Any additional SWMUs identified during the course of groundwater monitoring, field investigations, environmental audits or other means as described in Module III, Condition C., Assessment of Newly Identified SWMUs and AOCs.

- b. A total of 36 SWMUs have been identified as associated with the Facility. These are listed below, along with a history of corrective action at each SWMU, the current status of corrective action, and further corrective action requirements. SWMUs No. 1 through 32 were included in the Facility Operating Permit issued in 1988, and were based on the findings of the 1986 RFA (as amended in 1988). SWMUs No. 33 through 36 were identified subsequent to the 1986 RFA (as amended in 1988) and the issuance of the Facility Operating Permit, pursuant to the New SWMU Assessment requirements of that Permit. All 36 of the SWMUs are listed below.

<u>Number</u>	<u>Description</u>
SWMU No. 1	Incinerator
SWMU No. 2	Underground Lines at Phenol/Acetone Unit
SWMU No. 3	Underground Line at Energy Systems Unit
SWMU No. 4	Underground Area of Organics Contamination (removed from the list of SWMUs in the 1988 permit)
SWMU No. 5	North Cooling Water Return Lateral (stabilized and filled) and the Cooling Water Canal
SWMU No. 6	Polyethylene Area
SWMU No. 7	Tallaboa River Landfill
SWMU No. 8	Carbon Ponds
SWMU No. 9	Dredge Material Small Boat Landing - Area A
SWMU No. 10	Dredge Material Energy Systems - Area B
SWMU No. 11	Dredge Material North of Peerless - Area C
SWMU No. 12	Dredge Material Near Playa Tank Farm/Olefin Flare – Area D
SWMU No. 13	Dredge Material Near Tallaboa River LF - Area E
SWMU No. 14	Dredge Material West of Wastewater Treatment Plant (WWTP)
SWMU No. 15	Dripolene pond
SWMU No. 16	Container Storage/Warehouse Area
SWMU No. 17	Environmental Protection Department Residues Storage Tanks
SWMU No. 18	Phenol/Acetone Unit Residues Storage Tanks
SWMU No. 19	Energy Systems Unit Tanks
SWMU No. 20	Industrial Landfill

SWMU No. 21	Dewatered Sludge Landfill
SWMU No. 22	Primary Solids Ponds
SWMU No. 23	Equalization Basins
SWMU No. 24	Filter Presses
SWMU No. 25	East Aeration Basin and the West Aeration Basin
SWMU No. 26	Ground Burners
SWMU No. 27	WWTP Influent Sewer Leakage
SWMU No. 28	Chemical Addition Station Sump Leakage
SWMU No. 29	Glycols Unit Sewer Leakage
SWMU No. 30	Stormwater Control Pond
SWMU No. 31	Old Anaerobic Basin
SWMU No. 32	Old Ground Burners
SWMU No. 33	Puntilla Disposal Area
SWMU No. 34	Puntilla Tank 1501
SWMU No. 35	Hydrotreater Area
SWMU No. 36	Wastewater Treatment Plant (WWTP) Underground Effluent Pipe Leak

- c. As in the 1988 Operating Permit, the SWMUs are categorized into the following groups.

(1) Group I:

Group I SWMUs are units that are adjacent to each other and the Industrial Landfill, and together are referred to as the Industrial Landfill Waste Management Area. Group I consists of the following four SWMUs: the North Cooling Water Return Lateral (stabilized and filled) and the Cooling Water Canal (SWMU No. 5); the Dripolene Pond (SWMU No. 15); the Industrial Landfill (SWMU No. 20); and the Stormwater Control Pond (SWMU No. 30). These SWMUs share the same critical remedial action issues (e.g., groundwater contaminated with Dripolene), and are currently in the Corrective Measures Implementation stage. Under the 1988 permit, the sludges in the units have been stabilized by the addition of fly ash and caliche (limestone) and placed in the Industrial Landfill. Some of the stabilized sludge was also placed into the Dripolene Pond.

A groundwater recovery system for the entire Group I area was installed in 1991 for the purpose of removing, and preventing the further migration of, a plume of non-aqueous phase liquids (NAPLs) consisting primarily of Dripolene, as well as dissolved contaminants in the groundwater. The wells making up the Group I groundwater recovery system are shown in Permit Attachment VIII-2.

- (A) Until the Industrial Landfill (SWMU No. 20) completes closure and Post-closure care requirements pursuant to Modules VI and VII of this Permit, the Permittee shall continue to operate the Group I groundwater recovery system and Group I groundwater monitoring system (also known as the Industrial Landfill Waste Management Area recovery and monitoring system) so as to insure that groundwater in the Group I monitoring system wells does not exceed the groundwater protection standards given at Condition C.1. of Module VIII of this Permit.
- (B) SWMU No. 5 consists of the North Cooling Water Return Lateral (stabilized and filled and the Cooling Water Canal and sediments within the remaining unfilled portion of the Canal. The Canal was formerly used to return non-contact cooling water to Tallaboa Bay.

Pursuant to the 1988 Operating Permit, the Canal sediments, contaminated with Dripolene, were either stabilized in-place or stabilized and removed to the Industrial Landfill. The Canal was then backfilled and compacted with clean fill to prevent any further migration of contaminated groundwater.

Requirements to complete the remediation of the filled portion of this SWMU, along with the contaminated sediments in the unfilled portion are as follows:

- (i) Since any groundwater impacts from the filled portion of the Canal are being addressed as part of the Group I groundwater recovery system that was installed in

1991, the Permittee shall continue to operate the Group I groundwater recovery system until the Industrial Landfill completes closure and Post-closure care requirements pursuant to Modules VI and VII of this Permit.

- (ii) The sediments from the unfilled portion of this SWMU shall be addressed as part of the Group III SWMUs in section 3.B., below. These sediments are beyond the compliance point for the Industrial Landfill Management Area, have not been stabilized, are undergoing investigation to determine the extent of contamination, and may be subject to different corrective action alternative(s) than the sediments in the filled portion of this SWMU.
- (C) SWMU No. 15 consists of the Dripolene Pond.
  - (i) The SWMU consists of an above-grade surface impoundment, which formerly received Dripolene, a heavy (high molecular weight) organic oily process residual which remained following water quenching of the Olefins I process unit. SWMU No. 15 ceased receiving new Dripolene residuals in 1972 because of a change in Union Carbide Caribe Incorporated's, now Union Carbide Caribe/Dow's, manufacturing process, and therefore never operated as an interim status hazardous waste management unit.
  - (ii) However, approximately 5 million gallons of the Dripolene remained in the unit through 1988. Pursuant to requirements of the 1988 Permit, organic sludges from the Dripolene Pond were stabilized in-place and disposed in the Industrial Landfill. A portion of the stabilized material was re-used as fill material within the Dripolene Pond and covered.

- (iii) This SWMU is subject to the Group I area groundwater recovery and monitoring program. The Dripolene constituents within the groundwater, mostly in a non-aqueous phase, consist primarily of naphthalene, benzene, ethylbenzene, toluene, and acenaphthalene.
  - (iv) Since any groundwater impacts from this SWMU are being addressed as part of the Group I groundwater recovery system that was installed in 1991, the Permittee shall continue to operate the Group I groundwater recovery system until the Industrial Landfill completes closure and Post-closure care requirements pursuant to Modules VI and VII of this Permit.
- (D) SWMU No. 20 consists of the Industrial Landfill (ILF).
- (i) The ILF is a hazardous waste management unit (HWMU).
  - (ii) It consists of three disposal cells, two of which are closed and one of which remains active.
  - (iii) The active disposal cell is authorized to receive: 1) hazardous operational waste; and 2) compatible non-hazardous wastes pursuant to Module V of this Permit.
  - (iv) This entire unit is subject to 40 CFR Part 264 closure, post-closure, and groundwater monitoring requirements given in Modules VI, VII, and VIII of this Permit.
- (E) SWMU No. 30 consists of the Stormwater Control Pond.
- (i) The Storm Water Retention Pond (SWRP), which impounds storm water runoff from the ILF during

operations, is located immediately adjacent to the west side of the remediated Dripolene Pond. The SWRP will be incorporated into the ILF closure in accordance with Module VI of this Permit. During closure of the SWRP, storm water will be directed away from the SWRP impoundment, storm water already in the impoundment will be sampled (and discharged to the main cooling water return canal if appropriate based on sampling and analysis results), pump components will be dismantled and removed, dike walls will be collapsed into the SWRP, and the impoundment will be backfilled to final grade. As with the ILF itself, the SWRP will be covered with a flexible membrane liner cap pursuant to an EPA approved closure plan. The surface will be graded, with perimeter and transition slopes, if necessary. The final cover will convey storm water runoff to exterior ditches that drain via gravity into the Main Cooling Water Return Canal in accordance with Module VI of this Permit.

- (ii) Since any groundwater impacts from this SWMU are being addressed as part of the Group I groundwater recovery system that was installed in 1991, the Permittee shall continue to operate the Group I groundwater recovery system until the Industrial Landfill completes closure and Post-closure care requirements pursuant to Modules VI and VII of this Permit.
- (iii) Further requirements to complete clean-up of this SWMU are given in Module VI.

(2) Group II:

Group II comprises units classified as hazardous waste management units (HWMUs) under the 1988 Operating Permit. Since that time, two units, the Dewatered Sludge Landfill (SWMU No. 21) and the

Equalization Basins (SWMU No. 23) have been deregulated as HWMUs. They are now classified as non-regulated SWMUs. There are currently a total of ten SWMUs in Group II. Any releases from these units, except for the former HWMUs, SWMU No.23 and SWMU No. 24, are to be addressed through the closure and post-closure process, pursuant to Modules VI and VII and/or any closure and post-closure plans. Any releases from SWMU No.23 and SWMU No. 24 are to be addressed through the corrective action requirements.

(A) SWMU No. 16 consists of the Container Storage/Warehouse Area.

- (i) The container storage area has been closed.
- (ii) No significant releases to the soil were identified, but verification sampling to document clean closure is required to complete closure of this SWMU.
- (iii) Requirements to complete closure of this SWMU are given in Module VI of this permit.

(B) SWMU No. 17 consists of the Environmental Protection Department Residues Storage Tanks.

- (i) The tank unit has been removed, destroyed and landfilled.
- (ii) As part of closure, contaminated soil was removed and disposed. No significant releases to the soil were identified, but verification sampling to document clean closure is required to complete closure of this SWMU.
- (iii) Requirements to complete closure of this SWMU are given in Module VI of this permit.

- (C) SWMU No. 18 consists of the Phenol/Acetone Unit Residues Storage Tanks.
  - (i) The tank unit has been removed, destroyed and landfilled.
  - (ii) No significant releases to the soil were identified, but verification sampling to document clean closure is required to complete closure of this SWMU.
  - (iii) Requirements to complete closure of this SWMU are given in Module VI of this permit.
- (D) SWMU No. 19 consists of the Energy Systems Unit Tanks.
  - (i) The tank unit has been removed, destroyed and landfilled.
  - (ii) No significant releases to the soil were identified, but verification sampling to document clean closure is required to complete closure of this SWMU.
  - (iii) Requirements to complete closure of this SWMU are given in Module VI of this permit.
- (E) SWMU No. 21 consists of the Dewatered Sludge Landfill.
  - (i) This is one of the contiguous SWMUs within the Puntilla Waste Management Area.
  - (ii) Solidified dewatered hazardous sludge from the adjacent Wastewater Treatment Plant (WWTP) was disposed in Cell No. 1 from 1977 to 1982. This sludge from the WWTP units included dewatered sludge from the Primary Solids Ponds, the Equalization Basins, and the Aeration Basins. On this basis, the sludge, under the “mixture and derived-from rules,” was determined

to be a hazardous waste. The unit was determined to be a regulated unit in the Permittee's operating permit of 1988. Subsequently, the "mixture and derived-from rules" were vacated, retroactively, and therefore EPA has determined that the unit is a SWMU, but not a regulated unit.

- (iii) The Dewatered Sludge Landfill was closed in 1988 with waste in-place and capped with a landfill cover. Although this unit was not closed pursuant to an EPA approved closure plan, the Permittee submitted a Closure Certification Report and Post Closure Plan to EPA in December 1998 (Permit Attachment III-1), which has been technically approved by EPA, and jointly constitute the approved remediation plan for this unit. The approved remediation plan satisfies the corrective action requirements for this SWMU.
- (F) SWMU No. 22 consists of the Primary Solids Ponds.
- (i) This is one of the contiguous SWMUs within the Puntilla Waste Management Area.
  - (ii) The Primary Solids Ponds have been closed as a landfill. Requirements for closure and post-closure care, including groundwater monitoring, for this unit are given in Modules VI, VII and VIII of this permit.
- (G) SWMU No. 23 consists of two Equalization Basins.
- (i) This is one of the contiguous SWMUs within the Puntilla Waste Management Area.
  - (ii) The Equalization Basins have been partially closed as a landfill.

- (iii) All wastewaters sent to the wastewater treatment plant (WWTP) were routed through these impoundments for treatment until 1988. These Basins received effluent from the pre-treatment system, decanted rainwater from the adjacent Primary Solid Ponds and temporarily concentrated sludge during cleanup of the Primary Solids Ponds in 1987 and 1988. It was on this basis that the sludges, under the “mixture and derived-from rules,” were determined to be a hazardous waste. As a result, the Basins were determined to be a regulated unit in the Permittee’s operating permit of 1988. Subsequently, the “mixture and derived-from rules” were vacated by the court during the time period that the Basins were operating. Therefore, EPA has determined that the unit is a SWMU, but not a regulated unit.
  - (iv) The closure and cleanup activities performed by the Permittee in 1988 included the solidification and removal of the sludge and affected soils; and the disposal of the solidified sludge and excavated soil in the on-site Industrial Landfill.
  - (v) Testing and analysis of the soils immediately surrounding the Basins will be done to confirm remediation of this unit to risk-based standards for the contaminants of concern.
- (H) SWMU No. 24 consists of the Filter Presses.

By letter dated April 26, 1988, EPA concluded that the Filter Presses constituted totally enclosed treatment facilities exempt from Parts 264 and 265 and permitting requirements pursuant to 40 C.F.R. §§ 265.1(c)(10), 264.1(g)(6) and 270.1(c)(2)(iv). These units are not therefore subject to corrective action requirements.

- (I) SWMU No. 25 consists of the East Aeration Basin and the West Aeration Basin.
  - (i) This is one of the contiguous SWMUs within the Puntilla Waste Management Area.
  - (ii) The East Aeration Basin (Aeration Basin No. 2) is one of the regulated units that remain active. Requirements for closure, post closure and groundwater monitoring at this unit are given in Modules VI, VII and VIII of this permit
  - (iii) The West Aeration Basin (Aeration Basin No. 1) is in the process of closure. Permittee shall submit a closure plan to close this unit without waste in place. Closure shall be pursuant to the approved closure plan and Module VI of this Permit.
- (J) SWMU No. 26 consists of the Ground Burners.
  - (i) Contaminated soil beneath the pit was removed.
  - (ii) No significant releases to the remaining soil were identified, but verification sampling to document clean closure is required to complete closure of this unit.
  - (iii) Requirements to complete closure of this SWMU are given in Module VI of this permit.

(3) Group III:

Group III units consist of other SWMUs which are not HWMUs and, as of 1988, had not been investigated for releases. As a condition of the 1988 permit, the Permittee was required to conduct an investigation of these units to determine if any releases had occurred. There are 18 SWMUs within Group III. Group III SWMUs includes the four SWMUs that have been identified since issuance of the 1988 permit.

The results of this investigation was included in a report entitled: Detection RCRA Facility Investigation, Group III Solid Waste Management Units, which was submitted by the Permittee in February 1991; and an Addendum, which was submitted in August 20, 1993 (the Detection RFI). The Detection RFI determined whether there had been any releases from each SWMU that would require further investigation within a full RFI. The full RFI was conducted in two phases, each of which identified SWMUs requiring more extensive corrective action activities. The conclusions of Phase I of the full RFI was submitted in a report entitled: Phase I - RCRA Facility Investigation for Group III SWMUs, dated January 28, 2000 (the Phase I full RFI report). The conclusions of Phase II of the full RFI was submitted in a report entitled: Phase II RFI Report - Group III SWMUs; RFI Report - Group IV SWMUs (July 2001), (Permit Attachment III- 2). Phase II is also being partially addressed in a separate Corrective Measures Study (CMS). The findings of part of the CMS are included in a report entitled: Management-Level Ecological Risk Assessment for SWMU No. 5, North Cooling Water Outlet Canal (November 28, 2000) (Permit Attachment III- 3). The findings regarding each SWMU are set forth below.

- (A) SWMU No. 1 consists of the Incinerator.
- (i) The Detection RFI indicated that evidence of a release was found, and recommended that the SWMU be investigated as part of Phase I of a full RFI.
  - (ii) The Phase I full RFI report concluded that there have been releases to the soil, but not to the groundwater. The releases of the targeted constituents in soil were all below the risk-based screening criteria. These screening criteria were developed using the EPA Region III Risk-Based screening levels published on April 12, 1999.
  - (iii) No further corrective action is required.

- (B) SWMU No. 5 consists of the North Cooling Water Return Lateral (stabilized and filled) and the North Cooling Water Canal (Effluent Canal).
- (i) The Detection RFI indicated that evidence of a release was found, and recommended that the SWMU be investigated as part of Phase I of a full RFI.
  - (ii) The Phase I full RFI indicated detection of contaminants of concern in the bottom sediments that are above the applicable soil screening criteria. The report recommended that the SWMU be investigated as part a Phase II full RFI.
  - (iii) As a result of the detection of contaminants of concern in the sediments and soil and as part of the recommendation in the Phase II full RFI, the facility conducted a partial CMS for the unit and submitted the results in a report entitled: Management-Level Ecological Risk Assessment for SWMU No. 5, North Cooling Water Outlet Canal (dated November 28, 2000; received August 27, 2001).
  - (iv) The recommendations for corrective action in this report are undergoing review by EPA. When EPA approves corrective action activities, the Permittee shall implement such further actions as may be determined to be required, pursuant to the terms and conditions of this Permit.
- (C) SWMU No. 6 consists of the Polyethylene Area.
- (i) The Detection RFI found no evidence of a release that would justify conducting a full RFI.
  - (ii) No further corrective action is required.
- (D) SWMU No. 7 consists of the Tallaboa River Landfill.

- (i) The Detection RFI indicated that evidence of a release was found, and recommended that the SWMU be investigated as part of Phase I of a full RFI.
  - (ii) Phase I of the full RFI concluded that releases to the soil were detected in soil only, and that the contaminant levels are below the EPA Region III Risk-Based Criteria for soil screening and groundwater.
  - (iii) No further corrective action is required.
- (E) SWMU No. 8 consists of the Carbon Ponds.
  - (i) The Detection RFI found no evidence of a release that would justify conducting a full RFI.
  - (ii) No further corrective action is required.
- (F) SWMU No. 9 consists of the Dredge Material Small Boat Landing - Area A.
  - (i) The Detection RFI found no evidence of a release that would justify conducting a full RFI.
  - (ii) No further corrective action is required.
- (G) SWMU No. 10 consists of the Dredge Material Energy Systems - Area B.
  - (i) The Detection RFI found no evidence of a release that would justify conducting a full RFI.
  - (ii) No further corrective action is required.
- (H) SWMU No. 11 consists of the Dredge Material North of Peerless - Area C.

- (i) The Detection RFI indicated that evidence of a release was found, and recommended that the SWMU be investigated as part of Phase I of a full RFI.
  - (ii) Phase I of the full RFI detected releases of contaminants to the soil only. These contaminant concentrations are above soil screening criteria.
  - (iii) The calculated risk for the levels of the detected contaminants, using a Tier 2 Risk-Based Corrective Action (RBCA) risk assessment and industrial exposure assumptions for soil has been reviewed by EPA and found to be below a risk value of  $1 \times 10^{-5}$ . The Tier 2 RBCA risk assessment and industrial exposure assumptions for soil were discussed in the risk evaluation report prepared by the Permittee, dated December 1, 1999. Therefore, No. 11 has been determined not to require a Phase II investigation provided that the institutional and physical controls recommended in the Phase I RFI report, dated January 28, 2000, are acceptably implemented.
  - (iv) The Permittee shall implement all institutional and physical controls for this SWMU as described in the Phase I RFI report, including restricted site access, limited site maintenance, and appropriate institutional controls to limit the future site use. Within 60 days of implementing these measures, Permittee shall notify EPA in writing detailing its implementation of these controls.
- (I) SWMU No. 12 consists of the Dredge Material Near Playa Tank Farm/Olefin Flare – Area D.
- (i) The Detection RFI indicated that evidence of a release was found, and recommended that the SWMU be investigated as part Phase I of a full RFI.

- (ii) The Phase I full RFI indicated detection of contaminants of concern in the soil that are above the applicable soil screening criteria. The report recommended that the SWMU be investigated as part a Phase II full RFI.
  - (iii) The Phase II full RFI indicated that comparison of the analytical results of the contaminants of concern with EPA Region 3 Risk-Based Concentrations indicated exceedances for benzo(a) anthracene and benzo(a)pyrene.
  - (iv) In accordance with the Phase II investigation recommendation, the Permittee shall excavate portions of the soil contaminated with constituents of concern above risk-based concentrations and, after appropriate treatment, dispose of these soils in compliance with the RCRA Land Disposal Restrictions.
  - (v) The Permittee shall implement such further actions as may be determined to be required, pursuant to the terms and conditions of this Permit.
- (J) SWMU No. 13 consists of the Dredge Material Near Tallaboa River LF - Area E.
- (i) The Detection RFI found no evidence of a release that would justify conducting a full RFI.
  - (ii) No further corrective action is required.
- (K) SWMU No. 14 consists of the Dredge Material West of Wastewater Treatment Plant (WWTP).
- (i) The Detection RFI found no evidence of a release that would justify conducting a full RFI.
  - (ii) No further corrective action is required.

- (L) SWMU No. 28 consists of the Chemical Addition Station Sump Leakage.
  - (i) The Detection RFI found no evidence of a release that would justify conducting a full RFI.
  - (ii) No further corrective action is required.
- (M) SWMU No. 31 consists of the Old Anaerobic Basin.
  - (i) The Detection RFI found no evidence of a release that would justify conducting a full RFI.
  - (ii) No further corrective action is required.
- (N) SWMU No. 32 consists of the Old Ground Burners.
  - (i) The Detection RFI found no evidence of a release that would justify conducting a full RFI.
  - (ii) No further corrective action is required.
- (O) SWMU No. 33 consists of the Puntilla Disposal Area.
  - (i) The Detection RFI found no evidence of a release that would justify conducting a full RFI.
  - (ii) No further corrective action is required.
- (P) SWMU No. 34 consists of the Puntilla Tank 1501.
  - (i) The Detection RFI found no evidence of a release that would justify conducting a full RFI.
  - (ii) No further corrective action is required.
- (Q) SWMU No. 35 consists of the Hydrotreater Area.

- (i) The Detection RFI indicated that evidence of a release was found, and recommended that the SWMU be investigated as part Phase I of a full RFI.
  - (ii) The Phase I indicated detection of contaminants of concern in the soil and sediments that are above the applicable soil screening criteria.
  - (iii) The Phase II full RFI indicated that comparison of the analytical results of the contaminants of concern with EPA Region 3 Risk-Based Concentrations indicated exceedances for benzo(a)pyrene and maybe other constituents - the analytical conclusions are questionable.
  - (iv) The risk associated with benzo(a)pyrene for inhalation and direct contact in surface soils and groundwater is within acceptable limits.
  - (v) The risk associated with the subsurface contamination of benzo(a)pyrene shall be assessed prior to any future construction activities.
  - (vi) The analytical conclusions and recommendations for corrective action in this report are undergoing review by EPA. When EPA approves corrective action activities, the Permittee shall implement such further actions as may be determined to be required, pursuant to the terms and conditions of this Permit.
- (R) SWMU No. 36 consists of the Wastewater Treatment Plant (WWTP) Underground Effluent Pipe Leak.
- (i) A report entitled: Assessment Plan for Newly Identified SWMU No. 36 - the WWTPF Underground Effluent Pipe Leak (June 11, 1998) determined that there is no

evidence that this release has had an adverse impact to the soil and groundwater resources.

- (ii) No further corrective action is required.

(3) Group IV:

Group IV SWMUs are classified as process sewers. Group IV consists of four SWMUs. The results of a RFI done for the Group IV SWMUs have been submitted in a report entitled: Phase II RFI Report - Group III SWMUs; RFI Report - Group IV SWMUs (July 2001) (RFI report).

(A) SWMU No. 2 consists of the Underground Lines at Phenol/Acetone Unit

- (i) The underground line, a process sewer, had severe corrosion resulting in the loss of units products over an unknown period of time. The lines were replaced, the contaminated groundwater treated in the Facility's wastewater treatment plant, and the contaminated soil excavated to the water table and disposed in the Industrial Landfill. The area was backfilled to grade with clean caliche soil.
- (ii) The RFI indicates that all the analyzed contaminants of concern in soil were at concentration below the EPA Region 3 Risk-Based Concentrations (RBCs). In groundwater, the concentrations of the contaminants of concern were compared to the respective Alternative Concentration Levels (ACL) and, if no ACLs were available, to the EPA Region 3 Risk-Based Concentrations for tap water. Cumene and acetophenone exceeded the EPA Region 3 Risk-Based Concentrations in groundwater.

- (iii) A risk assessment indicated a potential risk to long-term industrial worker from inhalation from groundwater.
  - (iv) The RFI noted that the source had been removed and the concentrations of these contaminants of concern were non-detect at both ends of the South Lateral Canal, the potential point of exposure. Therefore, no action was recommended. The analytical conclusions and recommendations for corrective action in this report are undergoing review by EPA.
  - (v) When EPA approves corrective action activities, the Permittee shall implement such further actions as may be determined to be required, pursuant to the terms and conditions of this Permit.
- (B) SWMU No. 3 consists of the Underground Line at Energy Systems Unit.
- (i) Sulfuric acid leaked from the lines in September 1983.
  - (ii) The RFI indicated that the affected soils were excavated to four feet below the ground surface and replaced with uncontaminated soil.
  - (iii) pH for soil and groundwater were within regulatory limits.
  - (iv) No further corrective action is required.
- (C) SWMU No. 27 consists of the WWTP Influent Sewer Leakage.
- (i) The release represents a one-time spill from a concrete pipe. The release consisted of free phase organics.

- (ii) A recovery well (B-15) was installed and the Puntilla Waste Management Area indicator compounds were tested for. None of the compounds in soil were above the EPA Region 3 Risk-Based Concentrations. The concentrations in groundwater were compared to the risk-based ACLs and, if not available, to the EPA Region 3 Risk-Based Concentrations for tap water. Benzene exceeded the ACL.
  - (iii) The pumping of well B-15 shall be reinstated until the benzene level falls below the ACL. Benzene will be monitored quarterly for the first year and semi-annually thereafter. At the time that benzene concentrations fall below the ACL for three consecutive years, the Permittee may make a request to EPA that monitoring be stopped for this unit, at which time EPA will consider this request.
  - (iv) The Permittee shall implement such further actions as may be determined to be required, pursuant to the terms and conditions of this Permit.
- (D) SWMU No. 29 consists of the Glycols Unit Sewer Leakage.
- (i) The release was caused by a rupture of the industrial sewer line. The line transferred process wastes to sumps. The target compounds identified were 1,4-dioxane, 1,2-dichloroethane, tetralin, mono- and diethylene glycols, and metals (excluding mercury). VOCs, SVOCs, and metals were tested for.
  - (ii) All the tested VOC and SVOCs in soil were below the EPA Region 3 Risk-Based Concentrations. In groundwater only barium and chromium were detected, and these were below the EPA Region 3 Risk-Based Concentrations for tap water.
  - (iii) No further corrective action is required.

4. Area of Concern

An Area of Concern (“AOC”) has been identified pursuant to Section 3005 (c)(3) of RCRA, 42 U.S.C. §6925(c)(3), the omnibus provision, and its corresponding regulation, 40 C.F.R. § 270.32 (b)(2). Area of Concern (AOC) No. 1 consists of a known phase separated hydrocarbon (PSH) plume(s) floating on, as well as dissolved within, on-site groundwater. EPA has determined that this plume or plumes of PSH currently do(es) not present an immediate threat to the surface waters of Guayanilla and Tallaboa Bays and to the Caribbean Sea. However, if not remediated, the plume(s) has(have) the potential to migrate to these surface waters and could adversely impact their marine ecology.

The designation of this AOC is based on data given in the following reports: the RCRA Facility Assessment (February 1, 1988); a letter report prepared by the Permittee on the origin, history and status of the underground organic contamination (June 25, 1998); and a letter report prepared by the Permittee on the results of an investigation of the underground organic contamination (June 17, 1999).

EPA has not yet fully determined whether the on-site PSH is ascribable to releases originating at the Facility, sources outside the Facility property, or a combination of these sources. Pending further studies of the source or sources of the known PSH plume(s) floating on, or dissolved within, groundwater underlying the Facility property, this permit does not presently require remediation of the plume’s source. EPA reserves its right to initiate a permit modification pursuant to 40 C.F.R. §270.41 for the purpose of requiring the Facility to engage in corrective action on it’s property if it is determined that any of the PSH floating on or dissolved within the groundwater underlying the site is ascribable to releases originating at the Facility. EPA also reserves its right to address this situation through the issuance of a separate order. (See Module I.A of this Permit).

B. STANDARD CONDITIONS FOR CORRECTIVE ACTIONS

1. Work Plans. All work plans submitted pursuant to this Module shall include: (a) Quality Assurance/Quality Control protocols to ensure that data generated is valid and supported by documented procedures; (b) other plans, specifications and protocols, as applicable; (c) a schedule for starting specific tasks, completing the work and submitting interim and final reports; and (d) plans for the treatment, storage, discharge or disposal of wastes to be generated by activities described therein.

2. Monitoring and Records. Requirements for monitoring and records shall be in accordance with the Conditions of Module I of this Permit.
3. Health/Safety Plans. The Permittee shall develop, according to applicable Federal, State and local requirements, and submit to EPA, health and safety plans that will be implemented to ensure that the health and safety of project personnel, plant personnel and the general public are protected. These plans are not subject to approval by EPA.
4. Guidance Documents. When preparing the submissions described in this Module, the Permittee shall follow applicable guidance documents issued by EPA.
5. Prior Submittals. The Permittee may have already submitted portions of information, plans, or reports required by this Permit Module to EPA pursuant to the terms of previous applications, consent orders, or plans. For those items the Permittee contends it has already submitted to EPA, the Permittee may cite the specific document(s) and page(s) it believes adequately addresses each of the individual items requested by this Permit Module and its Appendices. The references, by document and page, shall be placed in the appropriate sections of the submittals that require the referenced information and data. If EPA, after a file search, determines that it does not possess any of the referenced information, plans, or reports that the Permittee claims were previously submitted, EPA will notify the Permittee and the Permittee shall submit the referenced documents within the time frame specified within the notification. EPA will decide whether any such information, plans and/or reports adequately address the required information.
6. New Interim Corrective Measures (ICM)
  - a. In the event the Permittee identifies a release or potential release of hazardous waste and/or hazardous constituents that poses a threat or potential threat to human health or the environment, or the Permittee becomes aware of a situation where it would be appropriate to prevent or minimize the further spread of contamination while long-term remedies at the Facility are pursued, the Permittee shall immediately notify EPA orally and shall notify EPA in writing within ten (10) days of such identification, summarizing the condition and the ICM being considered.

- b. If EPA determines that a release or potential release of hazardous waste and/or hazardous constituents at the Facility poses a threat or potential threat to human health or the environment, or if EPA identifies a condition at the Facility where it would be appropriate for the Permittee to implement ICM(s) to prevent or minimize the further spread of contamination while long-term remedies at the Facility are pursued, EPA will notify the Permittee in writing specifying the basis for EPA's determination.
- c. The following factors may be considered by EPA in determining the need for interim measures:
  - (1) Time required to develop and implement a final remedy;
  - (2) Actual and potential exposure of human and environmental receptors;
  - (3) Actual and potential contamination of drinking water supplies and sensitive ecosystems;
  - (4) The potential for further degradation of a medium absent interim measures;
  - (5) Presence of hazardous waste, including hazardous constituents, in containers that may pose a threat of release;
  - (6) Presence and concentration of hazardous waste, including hazardous constituents, in soils that have the potential to migrate to ground water or surface water;
  - (7) Weather conditions that may affect the current levels of contamination;
  - (8) Risks of fire, explosion, or potential exposure to hazardous waste, including hazardous constituents, as a result of an accident or failure of container or handling system; and
  - (9) Other situations that may pose threats to human health and the environment.

- d. Within forty-five (45) calendar days of first notifying EPA pursuant to Module III Section B.6 .a, or within forty-five (45) calendar days of receipt of notification from EPA pursuant to Module III Section B.6 (b), the Permittee shall submit to EPA, for review, comment, and approval, an ICM plan. The ICM plan shall consider, among other relevant factors, the character, extent, direction, rate of release, proximity to population, exposure pathways, effects of delayed action, and evaluations of appropriate ICMs. The proposed ICMs must be consistent with, and can be integrated into, any long-term corrective action at the facility.
- e. Within sixty (60) calendar days of approval of the ICM plan and selection of the ICM by EPA, the Permittee shall submit to EPA an ICM design plan. The ICM design plan shall include, but shall not be limited to, a description and design for the ICM and, if necessary, a monitoring program for measuring and reporting on the effectiveness of the ICM.
- f. Upon approval of the ICM design plan by EPA, the Permittee shall implement the plan as specified by EPA.
- g. If, after review of the ICM monitoring data, EPA determines that the ICM is not sufficient to achieve its goal, EPA may require the Permittee to implement enhancements to the ICM.
- h. Nothing herein shall preclude the Permittee from taking, at its own risk, immediate action where such action is required to address the conditions described herein, but it must promptly notify the EPA of such action.

7. Determination Of No Further Action

- a. Based on the results of the RFI for a particular SWMU (or combination of SWMUs) and other relevant information, the Permittee may submit an application to EPA for a Class III permit modification under 40 C.F.R. § 270.42(c) to terminate the subsequent corrective action requirements of this Module. This permit modification application must contain information demonstrating that there are no releases of hazardous wastes and/or hazardous constituents from SWMUs at the Facility that pose a threat to human health and the environment, as well as information required in 40 C.F.R. § 270.42(c),

which incorporates by reference 40 C.F.R. §§ 270.13 through 270.21, 270.62 and 270.63.

If, based upon review of the Permittee's request for a permit modification, the results of the RFI or RFA and other information, including comments received during the sixty (60) day public comment period required for Class III permit modifications, EPA determines that the releases or suspected releases which were investigated either are non-existent or do not pose a threat to human health and the environment, EPA may grant the requested modification.

- b. A determination of no further action shall not preclude EPA from requiring the Permittee to perform continued or periodic monitoring of air, soil, groundwater, surface water or subsurface gas, if necessary to protect human health and the environment, when site-specific circumstances indicate that release(s) of hazardous waste or hazardous constituents may occur from a SWMU at the Facility.
- c. A determination of no further action shall not preclude EPA from requiring the Permittee to perform further investigations, studies, or corrective measures at a later date if new information or subsequent analysis indicates a release or likelihood of a release from a SWMU at the Facility may pose a threat to human health or the environment.

8. Reporting.

- a. The Permittee shall submit to EPA signed quarterly progress reports of all activities performed pursuant to Module III (i.e., SWMU Assessment, Interim Measures, RCRA Facility Investigation, Corrective Measures Study) conducted, beginning no later than sixty (60) calendar days following the effective date of this Permit, and subsequently every two months thereafter. These reports shall contain:
  - (1) a description of the work completed, including, but not limited to, all preliminary (i.e., non-validated) analytical results obtained during the reporting period, lithologic logs of all soil borings and/or wells installed during that period, and well construction logs/diagrams for all wells completed during that period;

- (2) summaries of the following information: the dates covered by the report, identification of the wells actually operated as part of the pump and treat program during the reporting period, volume of free light non-aqueous phase liquid (LNAPL) recovered during the reporting period, results of any associated well measurements made during the reporting period (e.g., water table elevation, free product thickness, etc.), date of gauging, and dates of any sampling conducted and preliminary results, if available, or date for when results are expected;
  - (3) summaries of all findings made during the reporting period, including summaries of laboratory data not included above;
  - (4) summaries of all changes made during the reporting period;
  - (5) summaries of all contacts made with representatives of the local community and public interest groups during the reporting period;
  - (6) summaries of all problems or potential problems encountered during the reporting period and actions taken to rectify problems;
  - (7) changes in personnel conducting or managing the corrective action activities during the reporting period;
  - (8) projected work for the next reporting period; and
  - (9) copies of daily reports, inspection reports, validated laboratory/monitoring data, etc. generated during the reporting period.
- b. Upon request, copies of any other data (e.g., inspection reports, sample collection field notes, etc.) not previously submitted pursuant to Condition B.8.a of this Module shall be made available to EPA.
- c. Based on information provided in the quarterly progress reports required above, or upon other supporting information, EPA may require the Permittee to implement new or additional investigations and/or new or additional Interim Corrective Measures pursuant to Condition B.6 of this Module.

- d. All plans and schedules required by the conditions of this Permit Module are, upon approval of EPA, incorporated into this Permit by reference and become an enforceable part of this Permit. Any noncompliance with such approved plans and schedules shall be termed noncompliance with this Permit. Extensions of the due dates for submittals may be granted by EPA in accordance with the permit modification processes under 40 C.F.R. § 270.41.
9. Compliance with Governmental Requirements. During investigative activities, interim corrective measures and final corrective measures (including, but not limited to, equipment decommissioning, excavation and unit demolition) required under this Module, the Permittee shall ensure that the transportation, treatment, storage, discharge, and disposal of all contaminated materials generated as a result of such activities (including, but not limited to, soils, sediments, liquids, tanks, pipes, pumps, rubble, and structural materials) are performed in an environmentally sound manner pursuant to all applicable federal, territorial and local requirements and that is protective of human health and the environment. Nothing in this Module shall be construed to require the Permittee to proceed in a manner which is in violation of any such requirements.
10. Notifications
- a. Notification of Possible Off-Site Groundwater Contamination.

If at any time the Permittee discovers that hazardous wastes and/or constituents in groundwater have been released from a SWMU at the Facility, and have migrated, or are migrating, beyond the Facility boundary in concentrations that exceed background levels the Permittee shall:

    - (1) within ten (10) calendar days of discovery, provide written notice to EPA of the condition, and implement as required, all requirements given in Condition B.6 of this Module; and
    - (2) if requested by EPA, provide written notice to any person who owns or resides on the land which overlies the contaminated groundwater.
  - b. Notification of Surface Water Contamination. If at any time the Permittee discovers that hazardous wastes and/or constituents have been released from a SWMU at the Facility to surface waters, and have migrated, or are migrating, to

areas beyond the Facility boundary in concentrations that exceed standards given at 40 CFR § 141.61 and § 141.62, the Permittee shall:

- (1) within ten (10) calendar days of such discovery, provide written notification to EPA of the condition, and implement as required, all requirements given in Condition B.6 of this Module; and
- (2) if requested by EPA, initiate any actions that may be necessary to provide notice to all individuals who have or may have been subject to such exposure.

c. Notification of Residual Contamination. If hazardous wastes or hazardous constituents in SWMUs, or which have been released from SWMUs, will remain in or on the land, including groundwater, after the term of this Permit has expired, at concentrations that may pose an actual or potential threat to human health or the environment with a risk in the range of  $10^{-4}$  to  $10^{-6}$  or greater, EPA may require the Permittee to record, in accordance with Commonwealth law, a notation in the deed to the Facility property or in some other instrument which is normally examined during title search that will, in perpetuity, notify any potential purchaser of the property of the types, concentrations, and locations of such hazardous wastes or hazardous constituents. EPA may require such notice as part of the corrective measures selection process.

d. Notification of Air Contamination If at any time the Permittee discovers that hazardous constituents in the air have been released from a SWMU at the Facility and have migrated, or are migrating, to areas beyond the Facility boundary in concentrations that exceed relevant air standards, and that residences or other places at which continuous, long-term exposure to such constituents might occur are located within such areas, the Permittee shall, within ten (10) calendar days of such discovery:

- (1) provide written notice to EPA; and
- (2) initiate any actions that may be necessary to provide notice to all individuals who have or may have been subject to such exposure.

C. ASSESSMENT OF NEWLY IDENTIFIED SWMUS AND AOCs (For purposes of this subparagraph the term “SWMU” or “SWMUs” shall include an AOC, or AOCs, respectively).

1. Notification.

The Permittee shall notify EPA, in writing, of any additional SWMUs not listed in this Module, which are identified during the course of groundwater monitoring, field investigations, environmental audits, or other means within fifteen (15) calendar days of discovery.

2. SWMU Assessment Report. Within thirty (30) calendar days after notification of EPA, the Permittee shall submit a SWMU Assessment Report. This Report must provide, at a minimum, the following information for each newly identified SWMU:

- a. type of unit;
- b. location of each unit on a topographic map of appropriate scale;
- c. dimensions, capacities and structural description of the unit (supply available engineering drawings);
- d. function of unit;
- e. dates that the unit was operated;
- f. description of the wastes that were placed or spilled at the unit;
- g. description of any known releases from the unit (to include groundwater data, soil analyses, air monitoring data, and/or surface water/sediment data);
- h. the results of any prior sampling and analysis required for the purpose of determining whether releases of hazardous waste and constituents have occurred, are occurring, or are likely to occur from the unit; and
- i. whether this unit, individually or in combination with other units described in Module Condition A.3. of this Module is a significant source of contaminant release.

3. SWMU Sampling and Analysis Plan. Within sixty (60) calendar days after submittal of the SWMU Assessment Report required in Condition C.2 of this Module, the Permittee

shall submit a SWMU Sampling and Analysis Plan for any sampling and analysis of ground water, land surface and subsurface strata, surface water or air, as necessary to determine whether a release of hazardous waste including hazardous constituents from such unit(s) has occurred, is likely to have occurred, or is likely to occur. The SWMU Sampling and Analysis Plan must demonstrate that the sampling and analysis program, if applicable, is capable of yielding representative samples and must include parameters sufficient to identify migration of hazardous waste, including hazardous constituents, from any newly discovered SWMU to the environment.

4. Review and Revision of Sampling and Analysis Plan. Following submission of any SWMU Assessment Sampling and Analysis Plan set forth in Condition C.3 of this Module, subsequent activities regarding the Plan shall proceed in accordance with the following schedule:
  - a. A meeting may be requested in writing by the Permittee within 30 calendar days of the Permittee's receipt of Plan comments from EPA. This meeting may occur either prior to or after the 30 day period; however, the request must be made within the 30 day period.
  - b. Submission of a revised Plan to EPA within sixty (60) calendar days of the above-described meeting. If EPA determines that the above-referenced meeting is not necessary, the Permittee shall submit a revised Plan to EPA according to a schedule specified by the Agency not to exceed forty-five (45) calendar days after Permittee's receipt of Plan comments from EPA, unless the period for submission is extended by EPA; and
  - c. Implementation of the Plan should occur as soon as practicable, but in no event later than sixty (60) calendar days following written approval of the plan by EPA, unless extended by EPA.
5. SWMU Sampling and Analysis Report. Within sixty (60) calendar days from completion of the work specified in an approved SWMU Sampling and Analysis Plan the Permittee shall submit a SWMU Sampling and Analysis Report to EPA. The Report shall follow reporting requirements in the approved Plan and shall describe all results obtained from the implementation of the approved Plan.
6. Conclusions Based on the results of any SWMU Sampling and Analysis Report, EPA shall determine the need for further investigations at specific unit(s) covered in either the

SWMU Assessment Report or the SWMU Sampling and Analysis Report. If EPA determines that such investigations are needed, EPA shall require the Permittee to prepare an RFI Work Plan in accordance with Condition E.1 of this Module. The RFI Work Plan required under this section may omit certain items required under Condition E.1 of this Module, if these items have already been acceptably covered in prior RFI submissions, subject to EPA's approval. The Permittee shall submit to EPA a RFI Work Plan for such unit(s) within ninety (90) calendar days of written notification by EPA.

D. NOTIFICATION REQUIREMENTS FOR NEWLY DISCOVERED RELEASES AT EXISTING SWMUS AND AOCS (For purposes of this subparagraph the term "SWMU" or "SWMUs" shall include an AOC, or AOCs, respectively).

1. The Permittee shall notify EPA, in writing, of any new release(s) of hazardous waste and/or hazardous constituents from any SWMUs identified in Condition A.3 of this Module, no later than fifteen (15) days after discovery.
2. Based on the information provided in the notification, EPA shall determine whether further investigation of the release(s) is (are) required. If EPA determines that such investigations are needed, EPA shall notify the Permittee in writing, and may request the Permittee to prepare an RFI work plan in accordance with Condition E.1 of this Module. The RFI Work Plan required under this section may omit certain items required under Condition E.1 of this Module if these items have already been acceptably covered in prior RFI submissions, subject to EPA's approval. The Permittee shall submit to EPA an RFI Work Plan for such unit(s) within ninety (90) days of EPA's written notification that it is required.

E. STANDARD REQUIREMENTS FOR CORRECTIVE ACTION

1. RCRA FACILITY INVESTIGATION (RFI) WORK PLAN

RFI Work Plans have previously been submitted by the Permittee for all SWMUs where RFIs have been required. Subsequent to the effective date of this Permit, the following requirements apply:

- a. An RFI Work Plan shall be submitted within ninety (90) calendar days following written notification by EPA that an RFI is required pursuant to Conditions C.6 or D.2 of this Module.

- (1) The Work Plan shall describe the objectives of the investigation and the overall technical and analytical approach to completing all actions necessary to characterize the nature, direction, rate, movement, and concentration of releases of hazardous waste, including hazardous constituents, from specific SWMUs or groups of SWMUs, and their actual or potential receptors. The Work Plan shall detail all proposed activities and procedures to be conducted at the Facility and/or off-site, the schedule for implementing and completing such investigations, the qualifications of personnel performing or directing the investigations, including contractor personnel, and the overall management of the RFI.
  - (2) The Work Plan shall discuss sampling, data collection strategy, methods of sample analysis, as well as quality assurance and data management procedures, including formats for documenting and tracking data and other results of investigations, and health and safety procedures.
  - (3) The Work Plan must, at a minimum, address all necessary activities or include descriptions to meet the requirements specified in the model Scope of Work for a RCRA Facility Investigation (RFI), Permit Attachment III-4 of this Permit. However, certain items required under the Scope of Work for a RCRA Facility Investigation (RFI), may be omitted, subject to EPA's approval, if these items are deemed unnecessary or unwarranted, or have already been covered by prior RFI submissions to EPA. Within thirty (30) calendar days of EPA's written notification that an RFI is required pursuant to Conditions C.6. or D.2 of this Module, the Permittee may request, in writing, that EPA review for approval the Permittee's determination that any or all items required by Permit Attachment III-4 have been previously completed, and/or may be omitted. EPA shall notify the Permittee in writing of its determination whether any or all items required by Permit Attachment III-4 of this Module have been previously completed, and/or may be omitted.
- b. Following submission of an RFI Work Plan pursuant to Condition E.1.a of this Module, as modified by any determinations approved by EPA under Condition E.1.a.(3) of this Module, subsequent activities for the Plan shall proceed in accordance with the following schedule:

- (1) EPA shall review the Work Plan and either approve it or issue written deficiency comments.
  - (2) A meeting between the Permittee and EPA to discuss the latter's deficiency comments, if desired by the Permittee, must be requested by the Permittee within thirty (30) calendar days of the date of EPA's written deficiency comments, and approved by EPA. This meeting, if approved by EPA, may occur either prior to or after the 30 day period. The request, however, must be made within the 30 day period.
  - (3) The Permittee shall submit a revised RFI Work Plan to EPA within sixty (60) calendar days of the date of EPA's written deficiency comments, if no meeting is held pursuant to subparagraph (ii) immediately above, or if such a meeting is held, within sixty (60) calendar days after the meeting, unless, in either case, extended by EPA.
- c. EPA shall review, for approval as part of the RFI Work Plan, any plans developed pursuant to Condition C.6 of this Module, addressing further investigations of newly identified SWMUs, or Condition D.2 of this Module, addressing newly discovered releases from existing SWMUs.

2. RCRA FACILITY INVESTIGATION WORK PLAN IMPLEMENTATION.

No later than sixty (60) calendar days after written notification by EPA approving the RFI Work Plan, the Permittee shall begin implementation of the RFI according to the schedules specified in the RFI Work Plan. The RFI shall be conducted in accordance with the approved RFI Work Plan.

3. RCRA FACILITY INVESTIGATION FINAL AND SUMMARY REPORT.

- a. With reference to each SWMU and AOC, within sixty (60) calendar days of receipt by the Permittee of all validated analytical data generated under any approved RFI Work Plan, the Permittee shall submit to EPA an RFI Final and Summary Report pursuant to Permit Attachment III-4. Each RFI Final Report must contain adequate information to support further corrective action decisions at the Facility, should such actions be necessary. Each RFI Final Report shall describe the procedures, methods, and results of all investigations of the subject SWMU or AOC and any releases therefrom, including information on the type

and extent of contamination released, the sources, migration pathways, and actual or potential receptors. It shall also present all information gathered under the approved RFI Work Plan. The RFI Final Report shall also include a comparison of media specific hazardous constituents with their corresponding health based levels. Each RFI Summary Report shall summarize the corresponding Final Report including, without limitation, the procedures, methods, and results of the RFI.

- b. Following submission of the Reports set forth in subparagraph 3.a immediately above, EPA's review and approval shall proceed in accordance with the following schedule:
  - (1) EPA shall review the Reports and either approve them or issue written deficiency comments.
  - (2) A meeting between the Permittee and EPA to discuss the latter's deficiency comments, if desired by the Permittee, must be requested by the Permittee within thirty (30) calendar days of the date of EPA's written deficiency comments, and approved by EPA. This meeting, if approved by EPA, may occur either prior to or after the 30 day period. The request, however, must be made within the 30 day period.
  - (3) The Permittee shall submit revised Reports to EPA within forty-five (45) calendar days of the date of EPA's written deficiency comments, if no meeting is held pursuant to subparagraph (ii) immediately above, or if such a meeting is held, within forty-five (45) calendar days after the meeting, unless, in either case, extended by EPA.
- c. After EPA approves the RFI Final Report and the RFI Summary Report, the Permittee shall mail the approved Summary Report to all individuals on the Facility mailing list established pursuant to 40 CFR 124.10(c)(1), within thirty (30) calendar days of receipt of approval.
- d. A report summarizing the testing program required by Permit Attachment III-4 shall be submitted, as a separate document, at the same time as the RFI Final Report.

4. CORRECTIVE MEASURES STUDY ("CMS") PLAN

- a. The Permittee shall submit a Corrective Measures Study ("CMS") Work Plan within ninety (90) calendar days after the date of written notification from EPA that a CMS is required for any SWMU or AOC. Should a CMS be required for other SWMUs or AOCs, EPA's notification shall identify the hazardous constituent(s) which have exceeded health based levels as well as those which have been determined to threaten human health and the environment given site specific exposure conditions.
- b. EPA may require a CMS for any other SWMU or AOC under the following conditions:
  - (1) If the concentrations of hazardous constituents in groundwater, surface water/sediment, soil, or air exceed their corresponding individual health based levels;
  - (2) If the concentrations of hazardous constituents in groundwater, surface water/sediment, soil, or air do not exceed their corresponding individual health based levels, but additive exposure risk due to the presence of multiple constituents is not protective of human health; or
  - (3) If the concentrations of hazardous constituents in groundwater, surface water/sediment, soil, or air do not exceed individual health based levels, but still pose a threat to human health or the environment, given site-specific exposure conditions.
- c. The CMS Work Plan must address, at a minimum, all necessary activities of the model Scope of Work for a Corrective Measures Study, Permit Attachment III-5 of this Permit. However, certain items required under the Model Scope of Work for a Corrective Measure Study (CMS) given in Permit Attachment III-5 may be omitted, subject to EPA's approval, if these items are deemed unnecessary or unwarranted, or have already been covered by prior RFI or CMS submissions to EPA,. The CMS Work Plan shall provide:
  - (1) description of the general approach to investigating and evaluating potential corrective measures;

- (2) a definition of the overall objectives of the study;
  - (3) the specific plans for evaluating corrective measures to ensure compliance with corrective measure standards;
  - (4) the schedule for conducting the study; and
  - (5) the proposed format for the presentation of information.
- d. Following submission of the CMS Work Plan set forth in (c) immediately above, subsequent activities for the Plan shall proceed in accordance with the following schedule:
- (1) EPA shall review the Plan and either approve it or issue written deficiency comments.
  - (2) A meeting between the Permittee and EPA to discuss the latter's deficiency comments, if desired by the Permittee, must be requested by the Permittee within thirty (30) calendar days of the date of EPA's written deficiency comments, and approved by EPA. This meeting, if approved by EPA, may occur either prior to or after the 30 day period. The request, however, must be made within the 30 day period.
  - (3) The Permittee shall submit a revised Plan to EPA within forty-five (45) calendar days of the date of EPA's written deficiency comments, if no meeting is held pursuant to subparagraph (ii) immediately above, or if such a meeting is held, within forty-five (45) calendar days after the meeting, unless, in either case, extended by EPA.
- e. The CMS will be considered complete upon completion of the requirements of the Permit Attachment III-5. However, certain items required under Permit Attachment III-5 may be omitted, subject to EPA's approval, if these items are deemed unnecessary or unwarranted, or have already been covered by prior RFI or CMS submissions to EPA.

5. CORRECTIVE MEASURES STUDY (CMS) IMPLEMENTATION

No later than sixty (60) calendar days after the Permittee has received written approval from EPA for the CMS Work Plan, the Permittee shall begin to implement the CMS according to the schedules specified in the CMS Work Plan. The CMS shall be conducted in accordance with the approved Work Plan submitted pursuant to Condition E.4 of this Module.

6. CORRECTIVE MEASURES STUDY (CMS) FINAL REPORT

- a. Within forty-five (45) calendar days after the completion of the CMS, the Permittee shall submit a CMS Final Report (as required in Permit Attachment III-5). The CMS Final Report shall:
  - (1) summarize the results of the investigations and, if applicable, of any bench-scale or pilot tests conducted;
  - (2) provide a detailed description of the corrective measures evaluated and include an evaluation of how each corrective measure alternative meet the standards set forth in Condition E.7..a of this Module;
  - (3) present all information gathered under the approved CMS Work Plan; and
  - (4) provide any additional information to assist EPA in the corrective measure selection addressed under Condition E.8. of this Module.
- b. The CMS Final Report must address, at a minimum, all items necessary to demonstrate completion of tasks required by Attachment-III-5.
- c. Following submission of the CMS Final Report, EPA's review and approval shall proceed in accordance with the following schedule:
  - (1) EPA shall review the Report, and either approve it, or issue written deficiency comments.
  - (2) A meeting between the Permittee and EPA to discuss the latter's deficiency comments, if desired by the Permittee, must be requested by the Permittee within thirty (30) calendar days of the date of EPA's written deficiency comments, and approved by EPA. This meeting, if

approved by EPA, may occur either prior to or after the 30 day period. The request, however, must be made within the 30 day period.

- (3) The Permittee shall submit a revised Report to EPA within sixty (60) calendar days of the date of EPA's written deficiency comments, if no meeting is held pursuant to subparagraph (ii) immediately above, or if such a meeting is held, within sixty (60) calendar days after the meeting, unless, in either case, extended by EPA.

## 7. CORRECTIVE MEASURES SELECTION

- a. Based on the results in any RFI Final and Summary Report submitted under Condition E.3 of this Module, and for any CMS Final Report submitted under Condition E.6 of this Module, and any further evaluations of additional corrective measures, EPA shall select, subject to public notice and comment, corrective measures that will, at a minimum:
  - (1) be protective of human health and the environment;
  - (2) meet the concentration levels of hazardous constituents in each medium to be developed under Condition E.4.a of this Module determined to be protective of human health and the environment;
  - (3) control the source(s) of release(s) so as to reduce or eliminate, to the maximum extent practicable, further releases of hazardous waste, including hazardous constituents, that might pose a threat to human health and the environment; and
  - (4) meet all applicable waste management requirements.
- b. In selecting the corrective measure(s) which meet the standards for remedies established under Condition E.7.a of this Module, EPA shall consider the following evaluation factors, as appropriate:
  - (1) Long-term reliability and effectiveness. Any potential corrective measure may be assessed for the long-term reliability and effectiveness it affords, along with the degree of certainty that the corrective measure

will prove successful. Factors that shall be considered in this evaluation include:

- (2) the magnitude of residual risks in terms of amounts and concentrations of hazardous waste, including hazardous constituents, that remain after implementation of a corrective measure, considering the persistence, toxicity, mobility and potential to bioaccumulate of such hazardous wastes or constituents;
- (3) the type and degree of long-term management required, including monitoring, operation and maintenance;
- (4) the potential for exposure of humans and environmental receptors to remaining hazardous wastes, including hazardous constituents, considering the potential threat to human health and the environment associated with excavation, transportation, redisposal or containment;
  - (A) the long-term reliability of the engineering and institutional controls, including uncertainties associated with land disposal of untreated hazardous wastes, including hazardous constituents, and residuals; and
  - (B) the potential need for replacement of the corrective measure.
- (5) Reduction of toxicity, mobility and volume. Any potential remedy may be assessed as to the degree to which it employs treatment that reduces toxicity, mobility or volume of hazardous wastes and/or hazardous constituents. Factors that shall be considered in such assessments include:
  - (A) the treatment processes that the corrective measure employs and the materials it would treat;
  - (B) the amount of hazardous wastes, including hazardous constituents, that would be destroyed or treated;
  - (C) the degree to which the treatment is irreversible;

- (D) the residuals that will remain following treatment, considering the persistence, toxicity, mobility and propensity to bioaccumulate of such residuals; and
  - (E) all concentration levels of hazardous wastes, or hazardous constituents in each medium that any corrective measure must achieve to be protective of human health and the environment.
- (6) The short-term effectiveness of any potential corrective measure may be assessed by considering the following:
- (A) the magnitude of the reduction of existing risks;
  - (B) the short-term risks that might be posed to the community, workers, or the environment during implementation of such a corrective measure, including potential threats to human health and the environment associated with excavation, transportation, and disposal or containment; and
  - (C) the time until full protection is achieved.
- (7) Implementability. The ease or difficulty of implementing any potential corrective measure may be assessed by considering the following types of factors:
- (A) the degree of difficulty associated with constructing the technology;
  - (B) the expected operational reliability of the technologies;
  - (C) the need to coordinate with and obtain necessary approvals and permits from other agencies;
  - (D) the availability of necessary equipment and specialists;
  - (E) the available capacity and location of needed treatment, storage, and disposal services; and

- (F) the requirements for removal, decontamination, closure, or post-closure of units, equipment, devices or structures that will be used to implement the corrective measure.
- (8) Cost. The types of costs that may be assessed include the following:
  - (A) capital costs;
  - (B) operational and maintenance costs;
  - (C) net present value of capital, and operation and maintenance costs; and
  - (D) potential future corrective action costs.

8. PERMIT MODIFICATION FOR CORRECTIVE MEASURE IMPLEMENTATION

- a. Upon the selection of any corrective measure, EPA will initiate a modification to this Permit, pursuant to 40 C.F.R. § 270.41. The modification will specify all selected corrective measures and include, at a minimum, the following:
  - (1) A description of all technical features of any corrective measure that is necessary for achieving the standards for corrective measures established under Condition E.7.a of this Module, including length of time for which compliance must be demonstrated at specified points of compliance;
  - (2) All concentration levels of hazardous constituents in each medium, selected by EPA, that any corrective measure must achieve to be protective of human health and the environment;
  - (3) All requirements for achieving compliance with these concentration levels;
  - (4) All requirements for complying with the standards for management of wastes;

- (5) All requirements for removal, decontamination, closure, or post-closure of units, equipment, devices or structures that will be used to implement the corrective measure(s);
- (6) A schedule for initiating and completing all major technical features and milestones of the corrective measure(s); and
- (7) Requirements for submission of reports and other information.

### MODULE III ATTACHMENTS

- Permit Attachment III-1: The Dewatered Sludge Landfill Closure Certification Report and Post Closure Plan (December 1998).
- Permit Attachment III- 2: Phase II RFI Report - Group III SWMUs; RFI Report - Group IV SWMUs (July 2001).
- Permit Attachment III- 3: Management-Level Ecological Risk Assessment for SWMU No. 5, North Cooling Water Outlet Canal (November 28, 2000).
- Permit Attachment III-4: Scope of Work for a RCRA Facility Investigation (RFI).
- Permit Attachment III-5: Scope of Work for a Corrective Measures Study.

#### **MODULE IV - SURFACE IMPOUNDMENTS**

- A. **GENERAL DESCRIPTION.** The Permittee has a total of six surface impoundments (SIs) at its facility, only one of which is active. All of the SIs, including the active SI, are located in the Puntilla area of the UCCLLC facility, a peninsula in the southern part of the Permittee's site.

The Permittee has two aeration basin surface impoundments. Both aeration basins were part of the wastewater treatment process and have accepted hazardous waste sludge and effluent from the pretreatment system. Aeration Basin No. 2 (SI 2), also referred to as the East Aeration Basin, remains an active hazardous waste unit. The second aeration basin, Aeration Basin No. 1 (SI 1), referred to as the West Aeration Basin, is no longer in operation. The Permittee shall submit a closure plan that will provide for closure without waste in place ("clean closure") of SI 1. If the Permittee is unable to clean close SI 1, it shall close the unit with waste in place and comply with applicable post closure requirements set forth in 40 CFR §264.228. UCCLLC shall close SI 1, with or without waste in place, pursuant to an EPA approved closure plan and the applicable requirements set forth in Module VI of this Permit.

The Permittee also previously operated four other surface impoundments referenced in this permit as: Equalization Basin 1 (SI 3), Equalization Basin 2 (SI 4), and two Primary Solids Ponds (SIs 5 and 6). The two equalization basins are partially closed (sludge and contaminated soils were stabilized and disposed of in the Industrial Landfill). The two Primary Solids Ponds have completely been closed and capped. SI 3 and SI 4 will each be closed as a Solid Waste Management Unit (SWMU) as specified in Module III. SIs 5 and 6 are subject to closure and post-closure requirements set forth in Modules VI and VII.

Both the operating SI 2 and the decommissioned SI 1 are aggressive aerobic biological treatment units. On November 5, 1986, the Permittee submitted a request for "aggressive biological treatment" exemptions from the minimum technology requirement (MTR), Section 3004(o)(A) of RCRA, which otherwise requires installation of liners and leachate detection and collection systems. This waiver was granted on November 6, 1987, and the previous RCRA permit (effective as of November 1, 1988) allowed the facility to continue operation of both Surface Impoundments (SI 1 & 2).

Both Aeration Basins (SI 1 and 2) received wastewater from the adjacent Equalization Basins (SI 3 and 4) beginning in 1970. In 1988, the Equalization Basins (SI 3 and 4) were removed from service and the sludge was disposed of in the on-site Industrial Landfill. The Aeration

Basins (SIs 1 and 2) received wastewater from chemical storage and laboratory operations (after primary treatment), as well as groundwater from remediation activities at the plant. After treatment in SIs 1 and 2, wastewater was discharged via a NPDES-permitted outfall.

Both Aeration Basins (SI 1 and 2) are rectangular in shape with outer surface dimensions of approximately 355 feet by 225 feet. The bottom surface area of each SI is approximately 47,000 square feet; the top surface area of each impoundment is approximately 79,875 square feet. Both SIs have a bottom elevation of approximately 8 feet below mean sea level (MSL), and the top elevation is approximately 8 feet above MSL. Both SIs are underlain by approximately 6 feet of well-graded cobbles, gravel, and pebbles. Side slopes are lined with concrete for erosion protection and are angled at approximately 2 horizontal to 1 vertical (2:1 slope). Slurry walls were originally installed around SI 1 and SI 2 to facilitate construction. Water levels in SI 2 are maintained with at least 4 feet of freeboard, providing a maximum design capacity in each basin of approximately 5 million gallons.

The West Aeration Basin (SI 1) was taken out of service in 1988. A closure plan was submitted to EPA in June 1995. The Permittee will submit a new closure plan that will provide for clean closure of SI 1. Permittee shall close this unit pursuant to an EPA approved closure plan. Permittee may only manage hazardous waste in the East Aeration Basin (SI 2) in accordance with this permit module.

B. PERMITTED AND PROHIBITED WASTE IDENTIFICATION. The Permittee may manage hazardous wastes under the following conditions:

1. The Permittee may treat and dispose of the following hazardous waste in the East Aeration Basin (surface impoundment SI 2), subject to the terms of this Permit:

Surface Impoundment Designation	Description of Hazardous Waste	Hazardous Waste No.	Capacity
Surface Impoundment 2 (East Aeration Basin)	Contaminated storm water, wastewater from chemical storage and laboratory operations after primary treatment, as well as wastewater from groundwater activities.	K022 D018	Maximum design capacity of 5 million gallons

2. The Permittee is prohibited from treating, or disposing of any hazardous waste in the surface impoundment which is not identified in Permit Condition IV.B.1.

3. The Permittee may treat or dispose of compatible non-hazardous wastes in the surface impoundment as specified in Section G of Module II.
4. Permittee shall comply with the special provisions for Surface Impoundments set forth in Sections H-K of this Permit Module, and Subpart K of 40 CFR Part 264.

C. DESIGN, CONSTRUCTION AND OPERATING REQUIREMENTS.

No new design or construction work is required for the East Aeration Basin (SI 2).

The Permittee shall maintain at least four feet of freeboard between the maximum wastewater surface elevation and minimum elevation of the top of the embankment or dike surrounding Surface Impoundment (SI 2). The Permittee shall maintain the effluent pumping system, sumps, and gravity overflow piping as necessary to prevent overtopping of SI 2. [40 CFR 264.221(g)]

The Permittee shall design, construct, operate, and maintain the surface impoundment with sufficient structural integrity to prevent massive failure of the dikes. In ensuring structural integrity, it must not be assumed that the system will function without leakage during the active life of the unit. [40 CFR §264.221(h)]

In response to a release of waste from the Surface Impoundment as a result of storm wave action, the Permittee shall implement the following, in addition to the standard responses to a spill or other release of hazardous wastes specified in the Contingency Plan (Permit Attachment II-5):

1. The Permittee shall provide an overall preliminary assessment of the release, including photographs and analyses of soil and water samples in the vicinity of the release (if available) and an estimate of the volume of waste released to the environment, in writing, within two weeks after the release occurred.
2. The Permittee shall submit a plan for sampling and analysis of soil and water samples adequate to determine the extent of contamination, including all hazardous constituents which may be present in the released wastes. The plan shall be submitted to EPA for approval or modification, at the same time as the preliminary release assessment. The Permittee shall implement the sampling and analysis plan as directed by EPA.
3. The Permittee shall prepare additional release assessment and corrective measure plans as directed by EPA, if necessary.

D. LEAK CONTROL PROCEDURES FOR SI2.

1. The Surface Impoundment (SI 2) has been determined to be exempt from the requirement for installation of liner and leak detection systems. The unit (SI 2) however remains subject to emergency requirements.
2. The Permittee shall remove Surface Impoundment (SI 2) from service if the level of liquids in the impoundment suddenly drops and the drop is not known to be caused by changes in the flows into or out of the impoundment [40 CFR §264.227(b)(6)]. The Permittee shall then, in accordance to a contingency plan prepared for such events, immediately shut off the flow of wastes into the impoundment, contain any surface leakage and take other steps necessary to prevent catastrophic failure. In case of a minor dike leak, UCCLLC may continue treatment of the materials in the impoundment provided that it immediately investigates and corrects the problem by containing any surface leakage and shuts the flow of waste into the impoundment. The Permittee must then notify the Regional Administrator of the problem in writing within seven (7) days after detecting the problem, and perform repairs or other measures as necessary to comply with 40 CFR 264.227(a)-(b).
3. A Surface Impoundment that has been removed from service pursuant to Permit Condition IV.D.2. may be returned to service only if the portion of the impoundment which was failing is repaired and the following steps are taken: [40 CFR §264.227(d)]
  - (a) If the impoundment was removed from service as the result of actual or imminent dike or side slope failure, the structural integrity of the dike or side slope must be recertified by a qualified, registered professional engineer, in accordance with 40 CFR §264.226(c).
  - (b) If the impoundment was removed from service as the result of a sudden drop in the liquid level, the repaired liner system must be certified by a qualified, registered professional engineer as meeting the design, construction and Construction Quality Assurance specifications referenced in Permit Condition IV.C.1. [40 CFR §264.227(d)(2)(ii)]
4. A Surface Impoundment that has been removed from service in accordance with the requirements of 40 CFR §264.227, and is not being repaired, must be closed in accordance with the provisions of 40 CFR §264.228. [40 CFR §264.227(e)]

E. INSPECTION SCHEDULES AND PROCEDURES.

1. The Permittee shall inspect the Surface Impoundment (SI2) in accordance with applicable and approved inspection schedules, provided as Permit Attachment II-2, and the inspection log in Permit Attachment II-3.

While the Surface Impoundment is in operation, it must be inspected weekly and after storms to detect evidence of any of the following: deterioration, malfunctions, or improper operation of overtopping control systems.

2. If the Surface Impoundment is removed from service for more than six (6) months, then prior to returning to service, the Permittee shall obtain a certification from a qualified, registered professional engineer that the Surface Impoundment's dike or side slope, including that portion of any dike or side slope that provides freeboard, has structural integrity. The certification must establish that the dike or side slope:
  - (a) Will withstand the stress of the pressure exerted by the types and amounts of wastes to be placed in the Surface Impoundment; and
  - (b) Will not fail due to scouring or piping, without dependence on any liner system included in Surface Impoundment construction [40 CFR §264.226(c)].
3. Permittee shall inspect the cover system of surface impoundments for uniformity, damage and imperfections. [40 CFR §264.226(a)]

F. RECORDKEEPING AND REPORTING.

1. The Permittee shall notify the Regional Administrator, in writing, within seven (7) days from detecting either a leak in the dike or a sudden drop in the liquid level (and the drop is not caused by changes in the flows into or out of the impoundment). [40 CFR §264.227(b)(6)]
2. The Permittee shall maintain impoundment inspection records in the facility operating record for at least three years from the date of the inspection. [40 CFR §264.15(d)]

G. CLOSURE AND POST-CLOSURE CARE. The Permittee shall conduct closure and post-closure activities in accordance with 40 CFR §264.228 and Closure/Post-Closure Permit Modules (Module VI and VII), as appropriate.

H. SPECIAL SURFACE IMPOUNDMENT PROVISIONS FOR IGNITABLE OR REACTIVE

WASTES. The Permittee shall not place ignitable or reactive waste in the Surface Impoundment. [40 CFR §264.229]

- I. SPECIAL SURFACE IMPOUNDMENT PROVISIONS FOR INCOMPATIBLE WASTES. The Permittee shall not place incompatible wastes in the Surface Impoundment. [40 CFR §264.230]
- J. SPECIAL SURFACE IMPOUNDMENT PROVISIONS FOR HAZARDOUS WASTES F020, F021, F022, F023, F026 AND F027 [HSWA]. The Permittee shall not place hazardous wastes F020, F021, F022, F023, F026, or F027 in the Surface Impoundment. [40 CFR §264.231]
- K. SPECIAL SURFACE IMPOUNDMENT PROVISIONS FOR HAZARDOUS WASTES RESTRICTED FROM SURFACE IMPOUNDMENT UNITS [HSWA]. All wastes placed in the Surface Impoundment shall be pretreated to below the applicable treatment standards prescribed by 40 C.F.R. Part 268 including, but not limited to 40 C.F.R. §268.40 and 40 C.F.R. §268.48.
- L. COMPLIANCE SCHEDULE. Within forty-five days of the effective date of this permit, the Permittee shall submit a closure plan (40 CFR §264.112(a)) that will provide for closure without waste in place (“clean closure”) of SI 1 [40 CFR §264.228(a)(1)] and include a compliance schedule in accordance with 40 CFR §264.112(b)(6). SI2 will be closed in accordance with the schedule provided in Attachment VI-2, the closure plan for SI 2.

## **MODULE V - LANDFILLS**

- A. **GENERAL DESCRIPTION.** The Permittee operates an Industrial Landfill (ILF), in the northwestern portion of the main plant, which is authorized to receive hazardous and compatible non-hazardous waste. The ILF covers a total area of about 22 acres, of which 6.5 acres consists of controlled areas within and around the unit utilized for access roads and fences. The landfill was constructed in 1975. Since closure of the manufacturing plant in 1985, the ILF continues to receive both hazardous and non-hazardous waste as a part of plant closure and site remediation. The wastes disposed of in the ILF includes stabilized sludges and contaminated soils from remediation and closure activities

The waste bearing portions of the ILF cover 16.9 acres and is subdivided into three sections: Area I (2.1 acres), Area II (5.7 acres), and Area III (9.1 acres). The ILF has received waste since 1975 and, prior to November 1981, the ILF was operated using the trench and fill method. The trenches ranged from 200 to 300 feet long and 12 to 20 feet wide, with a depth between 5 and 8 feet. The trenches were operated by compacting waste in lifts of 18 inches. The majority of trenching occurred in Area III, although some filling did occur in Areas I and II. Area II is the only remaining active area. The remainder of Areas I and III have been capped and closed pursuant to an EPA approved closure plan.

The land surface elevation around the ILF, ranges between 7 and 11 feet above MSL. The 100-year flood elevation in the vicinity of the ILF decreases from 13.5 feet above MSL at the northeastern corner to approximately 6.5 feet above MSL at the southwestern corner of the ILF.

Groundwater occurs in the alluvium under unconfined conditions. The depth to the water table ranges between approximately 3 and 6 feet below the original ground surface. The groundwater flow direction is generally toward the southwest across the ILF area at a gradient of approximately 0.002 feet/foot.

The Storm Water Retention Pond (SWRP), located immediately adjacent to the west side of the remediated Driplene Pond, impounds storm water runoff from the ILF during operations. The SWRP can hold approximately 2 million gallons of storm water prior to transfer to the Waste Water Treatment Plant (WWTP). Pursuant to requirements given in Module VI of this Permit, the SWRP will be incorporated into the ILF closure.

Each of the above three areas of the ILF meets the definition of an existing facility, as per 40 CFR § 260.10, and only a vertical expansion (but no lateral expansion) for one of these area, Area II, is authorized under this permit. Therefore, a liner system, or leachate collection and detection system, is not required pursuant to 40 CFR § 264.301(a). Basic design criteria, including settlement potential, load bearing capacity, stability of landfill slopes, and seismic conditions were established in the original design and previous facility permit.

Under this permit, a portion of ILF - Area II is authorized to be vertically expanded above ground level by being built up to a crest elevation within two feet of 30 feet Mean Sea Level (MSL). Operation and maintenance requirements and the design for the vertical expansion portion of the landfill are given in this Module.

Approximately 70% of the ILF surface (Areas I and III) was closed in January 1994 with an approved cover under the previous RCRA permit. The cover for the existing closed portion consists of two feet of compacted clay as a low permeability layer, and two feet vegetated caliche. The remaining 30% of the ILF currently without cover will be filled with future waste materials and will then be covered, including the adjacent storm water retention pond, with an approved RCRA cap. At the current time, the estimated disposal volume necessary to complete closure of the plant is 80,000 cubic yards.

Authorized waste will be placed in ILF-Area II in lifts and covered with two feet of caliche. The waste will include the disposal of the wasted sludge from the WWTP.

The wastewater treatment process generates approximately 80 cubic yards of waste annually. The waste requires stabilization by the addition of Portland Cement and caliche prior to land disposal. Stabilization increases the volume of the waste material, resulting in approximately 150 cubic yards to be disposed of annually.

B. PERMITTED AND PROHIBITED WASTE IDENTIFICATION. The Permittee may dispose of remediation waste and operations waste, as defined in 40 CFR 260.10, in the landfill subject to the conditions set forth below:

1. The Permittee may dispose of and treat the following hazardous waste, in the ILF subject to the terms of this Permit.

Landfill Designation	Capacity	Dimensions of the Active Portion of the Landfill	Hazardous Waste No.
Industrial Landfill	80,000 cubic yards (remaining capacity)	5.7 acres (Area II) remain authorized for the disposal of hazardous waste.	K022, D018

2. The Permittee is not allowed to dispose of wastes containing free liquids (hazardous or non-hazardous) or containerized waste.
3. Hazardous and non-hazardous waste may be placed in the ILF if it is compatible with other wastes.
4. The Permittee is prohibited from disposing in the ILF any hazardous waste that is not included in Permit Condition V.B. 1.
5. Hazardous waste must be stabilized pursuant to the procedures set forth in Module III of this permit and treated to the applicable treatment standards set forth in 40 C.F.R. Part 268 prior to disposal in the landfill.
6. Permittee shall comply with the special landfill provisions set forth in 40 C.F.R. Part 264, Subpart N, and Sections G-J of this Permit Module.

C. DESIGN AND OPERATING REQUIREMENTS.

The Permittee shall design and operate the landfill(s) under the following conditions:

1. The Permittee shall locate, construct, operate, and maintain the landfill as specified in Permit Attachments VI-1, V-1, and V-2, so as to prevent the migration of any hazardous constituents into the groundwater or surface water. [40 CFR §264.301(d)]
2. The Permittee shall operate, and maintain a run-on control system in accordance with the design plans, specifications, and operating practices outlined in Permit Attachments V-1 and V-2. [40 CFR §264.301(g)]
3. The Permittee shall operate, and maintain a run-off management system in accordance with the design plans, specifications, and operating practices outlined in Permit

Attachments V-1 and V-2. The Permittee shall operate and maintain the storm water pond pump and pipeline to the WWTP until completion of filling of the landfill expansion, as specified in Attachment II-10. [40 CFR §264.301(h)]

4. The Permittee shall empty or otherwise manage run-on and run-off collection and holding facilities to maintain the design capacity of the system in accordance with the design plans and operating practices specified in Permit Attachments V-1 and V-2. The Permittee shall perform maintenance of the run-on and run-off control system at the ILF. [40 CFR §264.301(i)] Maintenance activities include:
  - Maintaining proper landfill slopes to promote run-off;
  - Maintaining free draining conveyance ditches and culverts through removal of soil and debris which could clog these structures;
  - Inspecting and repairing erosion damages; and
  - Inspecting and repairing damage to the pumping and piping system.
5. The Permittee shall cover or otherwise manage the landfill to control wind dispersal of particulate matter, in accordance with the specified erosion control methods in Permit Attachment V-2. [40 CFR §264.301(j)]

D. INSPECTION SCHEDULES AND PROCEDURES. The Permittee shall inspect the landfill in accordance with the following conditions:

1. The Permittee shall inspect the cover system (e.g., membranes, sheets or coatings) during construction and installation for uniformity, damage, and imperfections (e.g., holes, cracks, thin spots, or foreign materials). [40 CFR §264.303(a)]
2. The Permittee shall inspect the landfill in accordance with the inspection schedule in Permit Attachment II-3. [40 CFR §264.303(b)]

The landfill must be inspected weekly and after storms to detect evidence of any of the following:

- (a) Deterioration, malfunctions, or improper operation of run-on and run-off

systems.

- (b) Proper functioning of wind dispersal control systems (daily cover).

- E. SURVEYING AND RECORD-KEEPING. The Permittee shall maintain the following items in the operating record: [40 CFR §264.309]
1. A map with the exact location and dimensions (including depth) of the vertical expansion with respect to permanently surveyed benchmarks.
  2. The types of waste in the expansion and the approximate location.
- F. CLOSURE AND POST-CLOSURE CARE. The Permittee shall conduct closure and post-closure activities in accordance with the following conditions:
1. At final closure of the landfill, the Permittee shall follow the procedures in the approved Closure Plan contained in Permit Attachment VI-1. [40 CFR §264.310(a)]
  2. After final closure, the Permittee shall follow the plans and procedures in the approved Post-Closure Care Plan in Permit Attachment VI-1 and in the Post-Closure Permit Module (Module VII). [40 CFR §264.310(b)]
- G. SPECIAL LANDFILL PROVISIONS FOR IGNITABLE OR REACTIVE WASTES. The Permittee shall not place ignitable or reactive waste in the landfill.
- H. SPECIAL LANDFILL PROVISIONS FOR INCOMPATIBLE WASTES. The Permittee shall not place incompatible wastes or material in the landfill. [40 CFR §264.217(b)]
- I. SPECIAL LANDFILL PROVISIONS FOR HAZARDOUS WASTE F020, F021, F022, F023, F026 AND F027 (HSWA). The Permittee may not place hazardous wastes F020, F021, F022, F023, F026 or F027 in the landfill.

J. SPECIAL LANDFILL PROVISIONS FOR LIQUID WASTE.

1. The Permittee shall not place bulk liquid wastes or waste containing free liquids in a landfill. [40 CFR §264.314(b)]
2. The Permittee shall demonstrate the absence of free liquids in the bulk waste by the following test: “Method 9095 (Paint Filter Liquids Test)” as described in the “Test Methods for Evaluating Solid Wastes, Physical/Chemical Methods”. (EPA Publication No. SW-846).
3. The Permittee shall not place containers holding free liquid in the landfill.

## **MODULE VI - CLOSURE**

- A. **MODULE HIGHLIGHTS.** There are thirteen (13) units at the facility undergoing different stage of closure activities. Two active units (one landfill-ILF and one aeration basin-SI 2) are expected to begin closure upon receiving the known final volume of hazardous wastes. Five units, three sets of storage tanks, a container storage area and a ground burner unit, are currently undergoing closure without leaving waste in place (“clean closure”). One unit, SI 1, will be submitting a closure plan for clean closure. Two units, SI 5 and SI 6 are undergoing closure leaving waste in place and will be subject to post-closure care. The other units, the Dewatered Sludge Landfill and two surface impoundments (SI 3, SI 4) will each be closed as a Solid Waste Management Unit (SWMU) as specified in Module III. Units which close with waste in place are also subject to the post closure requirements set forth in Module VII.
- B. **UNIT IDENTIFICATION:** A description of each of the units subject to closure is set forth below.
- B.1. Active Units

**Industrial Landfill:** Approximately 70% of the ILF surface was closed in January 1994 under the previous RCRA permit and an EPA approved closure plan. The remaining 30% of the ILF (Area II) continues to receive a limited volume of additional hazardous and compatible non-hazardous waste. The ILF-Area II will be closed by covering all of Area II with a flexible membrane liner (FML), a drainage layer composed of a geotextile above and below a composite geonet drainage system and a top layer. The top layer will consist of 18 inches of compacted caliche, six inches of uncompacted caliche, and three inches of top soil to support vegetation. The cover will be completed to a crest elevation of approximately 30 feet above mean sea level (MSL). Post-operational requirements for Area II will be addressed in the ILF closure plan (Permit Attachment VI-1).

The Storm Water Retention Pond (SWRP), which impounds storm water runoff from the ILF during operations, is located immediately adjacent to the west side of the remediated Dripolene Pond. The SWRP will be incorporated into the closure of the Area II of the ILF. During closure of the SWRP, storm water will be directed away from the SWRP impoundment, storm water already in the impoundment will be sampled (and discharged to the Effluent Canal if appropriate based on sampling and analysis results), pump components will be dismantled and removed, dike walls will be collapsed into the SWRP, and the impoundment will be backfilled

to final grade. As with the ILF itself, the SWRP will be covered with a flexible membrane liner (FML) cap. The surface will be graded at a slope of between 3 and 5 percent, with perimeter and transition slopes, if necessary, as great as 4 horizontal to 1 vertical. The final cover will convey storm water runoff to exterior ditches that drain via gravity into the Effluent Canal. This unit, along with Area II of the ILF, will be closed with waste in place pursuant to the EPA approved closure plan. The Closure and Post-Closure Plan is set forth in Permit Attachment VI-1.

East Aeration Basin: The approach for closure of the East Aeration Basin, also referred to as Aeration Basin No. 2 (SI 2), includes elimination of free liquids, solidification of the remaining sludge with caliche, backfill with caliche to final grade, and placement of the final cover. The final cover design includes a bottom geotextile, a flexible membrane liner (FML) or cap geomembrane; a composite geonet drainage layer; and a top layer consisting of 18 inches of compacted caliche, 6 inches of uncompacted caliche, and three inches of top soil. The cushion geotextile to be placed above and below the FML will ensure the integrity of the FML. The surface will be vegetated to provide erosion protection. The cap will be graded to route storm water runoff inward towards a drainage path that drains to an outlet structure. The storm water runoff will be conveyed through a drainage pipe before discharge into Tallaboa Bay. This unit will be closed with waste in place pursuant to an EPA approved closure plan. The closure and post closure plan is provided in Permit Attachment VI-2.

## B2. Closed Units

West and East Primary Solids Ponds: The West and East Primary Solids Ponds, also referred to in this permit as Surface Impoundments 5 and 6 (SIs 5 and 6) have been closed as landfills. These units are subject to post closure care. A Closure Certification Report/Post Closure Plan is set forth in Permit Attachment VII-3.

The original closure plan for these units was submitted to EPA in January 29, 1988. Later that year, SIs 5 and 6 were emptied, and a cover system was installed over each unit. A revised closure plan was submitted to EPA on January 5, 1990. This plan was public noticed in May 1991, but never approved. The Closure Certification Report, once approved, constitutes EPA's approval of the closure of these units.

Closure and cleanup activities at SIs 5 and 6 in 1988 included solidification and removal of sludge and affected soils; disposal of solidified sludge and excavated soil in the on-site industrial landfill. These units were over excavated to ensure the complete removal of the wastes in, or

immediately adjacent to, the ponds. Likewise, the cap covered an area larger than the original ponds. SIs 5 and 6 were capped once the ponds were backfilled with caliche. The cover system consisted of a 24 inch layer of compacted brown Ponce clay to function as a hydraulic barrier, an 18 inch layer of compacted yellow caliche to function to function as drainage layer, and a 6 inch layer of uncompacted yellow caliche with a well maintained grass cover.

SIs 5 and 6 previously managed solids and sludges from the manufacturing plant and the WWTP. SI 5 was used primarily to store WWTP sludges and wastes from truck washes. SI 6 contained primarily settleable solids from the WWTP primary clarifiers. These wastes included hazardous waste sludge and effluent from the pretreatment system.

SIs 5 and 6 each have a bottom area of approximately 33,000 square feet, and a top area of approximately 54,000 square feet. The bottom of each impoundment, as well as the dike walls, were constructed of re-compacted soil. The bottom of SIs 5 and 6 is situated at approximately 3 feet above MSL. At their highest point, the dikes reach between 10 and 10.5 feet above MSL. Sludge and water levels in SIs 5 and 6 were typically maintained at 7 to 8 feet above MSL, providing a design capacity in each unit of approximately 2 million gallons.

### B3. Clean Closure Units

Hazardous wastes were also previously managed in tanks, a container storage area, ground burners and west aeration basin at the Permittee's facility. These units are no longer operational. The Permittee intends to close these units without waste in place ("clean closure"). Assuming the Permittee can demonstrate clean closure, post-closure care will not be required. These units will be closed pursuant to EPA approved closure plans. Closure Plans addressing the tanks, container storage area and ground burners are provided as Permit Attachments VI-3 through VI-6. The Permittee shall submit a closure plan for the west aeration basin pursuant to the schedule set forth in Module IV.

The following eight (8) aboveground RCRA storage tanks were removed during site-wide decommissioning activities undertaken between 1987 and 1990 at the facility:

Three (3) Environmental Protection Department (EPD) Residues Storage Tanks (SWMU#17) also known as tanks 18D-1001, 18D-1002 and 18D-1010;

Three (3) Energy Systems (ES) Department Residues Storage Tanks (SWMU#19) also known as tanks 31D-472, 31D-474, and 31D-480; and

Two (2) Phenol/Acetone (P/A) Department Residues Storage Tanks (SWMU#18) also known as tanks 14D-324 and 14D-754.

The tanks were emptied, hydroblasted, and closed during site demolition activities. Ancillary piping was flushed and disconnected, and concrete secondary containment structures were hydroblasted. All wash water was collected in sumps for proper management. Verification sampling will be implemented upon final approval and public noticing of the closure plans. The verification samples will determine if contamination is present beneath the diked containment systems. Closure Plans for the storage tanks are provided in Permit Attachments VI-3 and VI-4.

Container Storage/Warehouse Area (SWMU#16): The container storage area was also closed during the site-wide decommissioning effort. Wastes formerly stored in this area included off-specification monochlorobenzene (U037) and waste ethylene dichloride (U077). During the decommissioning all containers were removed for disposal at an approved RCRA disposal facility, all wooden pallets and plastic covers were disposed at the on-site industrial landfill, and contaminated soil was excavated from the storage area and disposed of in the ILF. Subsequent soil sampling will take place pursuant to an EPA approved closure plan. The closure plan is provided as Permit Attachment VI-5.

RCRA Ground Burner Units (SWMU#26): The ground burners were above ground thermal treatment facilities closed during site demolition activities. All piping, equipment, and thermal treatment structures were flushed and dismantled. Soil, ash, and grass from inside the ground burner pit were removed, along with several inches of stripped soil from the area beneath the pit. All solid materials were disposed in the on-site industrial landfill, and wastewater from decontamination operations was collected by vacuum truck and transferred to the on-site wastewater treatment plant. Soil samples will be collected upon final approval and public noticing of the closure plan to determine if contamination was present beneath the excavated soil. The Closure Plan for the ground burners is provided as Permit Attachment VI-6.

The ground thermal treatment facility was located directly west of the Primary Solids Ponds. The ground burners were used to dispose of liquid organic residue from the EPD residue storage tanks that could not be burned in the plant boilers. The burners were operated in such a way that all materials were fully incinerated.

This unit is subject to the groundwater monitoring requirements set forth in Module VIII in

order to demonstrate clean closure.

West Aeration Basin: The West Aeration Basin is also referred to as Aeration Basin No. 1 (SI 1). SI 1 is no longer operational and is subject to closure. UCCLLC will submit a closure plan for clean closure pursuant to the schedule set forth in Module IV. The closure plan will be subjected to public notice and comment and EPA approval.

- C. CLOSURE PERFORMANCE STANDARD. The Permittee shall close each hazardous waste management units identified in this Module as required by 40 CFR §264.111 and in accordance with EPA approved closure plans. Only the closure plan for SI1 will be subject to public notice and comment, which is a prerequisite to EPA approval. All other closure plans are approved.

D. CLOSURE PLAN; AMENDMENT OF PLAN

1. Requirement for Written Plan. In accordance with 40 CFR §264.112(a) and Permit Condition II.9, of this permit, the Permittee shall maintain a copy of its closure plans in the Facility operating record.
2. Content of Closure plan. The closure plan must identify the steps necessary to perform partial and/or final closure of the Facility at any point during its active life. The closure plan must include all of the information required by 40 CFR §264.112(b). At a minimum, the closure plan must include the following:
  - (a) A description of how each hazardous waste management unit at the Facility will be closed in accordance with 40 CFR §264.111; [40 CFR §264.112(b)(1)]
  - (b) A description of how final closure of the Facility will be conducted in accordance with 40 CFR §264.111. The description must identify the maximum extent of the operations which will be not be closed during the active life of the Facility; and [40 CFR §264.112(b)(2)]
  - (c) An estimate of the maximum inventory of hazardous wastes ever on-site over the active life of the Facility and a detailed description of the methods to be used during partial closures and final closure, including, but not limited to, methods for removing, transporting, treating, storing, or disposing of all hazardous wastes, and identification of the type(s) of the off-site hazardous waste management units to be used, if applicable; and [40 CFR §264.112(b)(3)]

- (d) A detailed description of the steps needed to remove or decontaminate all hazardous waste residues and contaminated containment system components, equipment, structures, and soils during partial and final closure, including, but not limited to, procedures for cleaning equipment and removing contaminated soils, methods for sampling and testing surrounding soils, and criteria for determining the extent of decontamination required to satisfy the closure performance standard; and [40 CFR §264.112(b)(4)]
  - (e) A detailed description of other activities necessary during the closure period to ensure that all partial closures and final closure satisfy the closure performance standards, including, but not limited to, groundwater monitoring, leachate collection, and run-on and run-off control; and [40 CFR §264.112(b)(5)]
  - (f) A schedule for closure of each hazardous waste management unit and for final closure of the Facility. The schedule must include, at a minimum, the total time required to close each hazardous waste management unit and the time required for intervening closure activities which will allow tracking of the progress of partial and final closure. [40 CFR §264.112(b)(6)]
3. Amendment to Closure Plans. The Permittee shall submit a written request for a permit modification to authorize any change in its closure plans in accordance with the procedures given at 40 CFR Parts 124 and 270. The written request must include a copy of the amended design or closure plans for approval by the Director. [40 CFR §264.112(c)]
- (a) The Permittee may submit a written request to the Director for a permit modification to amend the closure plan at any time prior to the notification of partial or final closure of the Facility. [40 CFR §264.112(c)(1)]
  - (b) The Permittee must submit a written request for a permit modification to authorize a change in the closure plan whenever: [40 CFR §264.112(c)(2)]
    - (i) Changes in operating plans or Facility design affect the closure plan; [40 CFR §264.112(c)(2)(i)]
    - (ii) There is a change in the expected year of closure, if applicable; or [40 CFR §264.112(c)(2)(ii)]

(iii) In conducting partial or final closure activities, unexpected events require a modification of the closure plan. [40 CFR §264.112(c)(2)(iii)]

(c) The Permittee must submit a written request for a permit modification including a copy of the amended closure plan for approval at least sixty (60) days prior to the proposed change in Facility design or operation, or no later than sixty (60) days after an unexpected event has affected the closure plan. If an unexpected event occurs during the partial or final closure period, the Permittee must request a permit modification no later than thirty (30) days after the unexpected event. [40 CFR §264.112(c)(3)]

The Permittee of a surface impoundment or waste pile that intends to remove all hazardous waste at closure and is not otherwise required to prepare a contingent closure plan under §264.228(c)(1)(i) or 58(c)(1)(i) must submit an amended closure plan to the Director no later than 60 days from the date that the Permittee or the Director determines that the hazardous waste management unit must be closed as a landfill, subject to the requirements of §264.310, or no later than 30 days from that date if the determination is made during partial or final closure. [40 CFR §264.112(c)(3)]

The Director will approve, disapprove, or modify the amended plans in accordance with the procedures in 40 CFR Parts 124 and 270. The approved closure plan will become a condition of this Permit, in accordance with 40 CFR §270.32. [40 CFR §264.112(c)(3)]

(d) If the Director requests modifications to the plan under the conditions described in 40 CFR §264.112(c)(2), the Permittee must submit the modified plan within sixty (60) days of the Director's request, or within thirty (30) days if the change in Facility conditions occurs during partial or final closure. [40 CFR §264.112(c)(4)]

4. Notification of Partial Closure and Final Closure.

(a) The Permittee must notify the Director in writing at least sixty (60) days prior to the date upon which the Permittee expects to begin final closure of the Surface Impoundments (East Aeration Basin or SI 2, West Aeration Basin or SI 1), and Industrial Landfill. [40 CFR §264.112(d)(1)].

(b) For the Surface Impoundments (East Aeration Basin or SI 2, and West Aeration Basin

or SI 1) and Industrial Landfill, the date when the Permittee "expects to begin closure" must be either no later than thirty (30) days after the date on which any hazardous waste management unit receives the known final volume of hazardous wastes or, if there is a reasonable possibility that the hazardous waste management unit will receive additional hazardous wastes, no later than one year after the date on which the unit received the most recent volume of hazardous waste. [40 CFR §264.112(d)(2)(i)]

- (c) If this permit is terminated, or if the Permittee is otherwise ordered, by judicial decree or final order under Section 3008 of RCRA, to cease receiving hazardous waste or to close, then the requirements of Permit Conditions VI.D.4(a) and (b) do not apply. However, the Permittee must still close the Facility in accordance with the deadlines established in 40 CFR §264.113 and Permit Condition VI.D.6 of this Module. [40 CFR §264.112(d)(3)]
- 5. Removal of Wastes and Decontamination or Dismantling of Equipment. Nothing in this Permit shall preclude the Permittee from removing hazardous wastes and decontaminating or dismantling equipment in accordance with an approved partial or final closure plan at anytime before or after notification of partial or final closure, as provided in 40 CFR §264.112(e).
- 6. Time Allowed for Closure. After receiving the final volume of hazardous or non-hazardous waste, the Permittee shall treat, remove from any hazardous waste management unit or the Facility, or dispose of, all hazardous waste and shall complete closure activities in accordance with the schedule specified in the approved closure plans, Permit Attachments VI-1 through 6, Permit Attachment Permit Attachments VI-1 through 6, Permit Attachment VII-1 and the requirements of 40 CFR §264.113. The Permittee shall also:
  - (a) Within ninety (90) days after receiving the final volume of hazardous or non-hazardous waste at a hazardous waste management unit or the Facility, treat, remove from the unit or dispose of all hazardous waste in accordance with the closure plan; and [40 CFR §264.113(a)]
  - (b) Complete partial and final closure activities in accordance with the closure plan and within one hundred and eighty (180) days after receiving the final volume of hazardous or non-hazardous waste at the hazardous waste management unit or Facility.[40 CFR §264.113(b)]

7. Disposal or Decontamination of Equipment. During all partial and final closure periods, the Permittee shall properly dispose of or decontaminate contaminated equipment, structures, and soils as required by 40 CFR §264.114 and as outlined in the closure plans, Permit Attachments VI-1 through VI-6 and Permit Attachments VII-1, as approved. By removing any hazardous waste or hazardous constituents during partial and final closure, the Permittee may become a generator of hazardous waste and must handle that waste in accordance with all applicable requirements of 40 CFR Part 262.
8. Certification of Closure. As required by 40 CFR §264.115, within sixty (60) days of completion of closure of each hazardous waste management unit, and within sixty (60) days of the completion of final closure, the Permittee shall submit to the Director, by registered mail, a certification that the hazardous waste management unit or the Facility, as applicable, has been closed in accordance with the specifications in the closure plan. The certification must be signed by the Permittee and by an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Director upon request, until he or she releases the Permittee from the financial assurance requirements for closure under 40 CFR §264.143(i).
9. Survey Plat. No later than the submission of the certification of closure of each hazardous waste disposal unit, the Permittee must submit to the local zoning authority with jurisdiction over local land use, and to the Regional Administrator, a survey plat indicating the location and dimensions of landfill cells or other hazardous waste disposal units with respect to permanently surveyed benchmarks. This plat must be prepared and certified by a professional land surveyor. The plat filed with the local zoning authority, or the authority with jurisdiction over local land use must contain a note, prominently displayed, which states the Permittee's obligation to restrict disturbance of the hazardous waste disposal unit in accordance with the applicable subpart G regulations. [40 CFR §264.116]

E. COST ESTIMATE: The Permittee's closure cost estimates prepared in accordance with §264.142(a) as specified in Permit Attachments VI-1 through VI-6 and Permit Attachment VII-1 shall be up-dated annually.

1. During the active life of the Facility, the Permittee must adjust the post-closure cost estimates for inflation annually, within 30 days (the Permittee is using the financial test and corporate guarantee) after the close of the firm's fiscal year and before the submission of updated information to the Director as specified in 40 CFR

§264.143(f)(3). The adjustment to the closure cost estimates must be made in accordance with the requirements of 40 CFR §264.142(b).

2. The Permittee must revise the closure cost estimates no later than thirty (30) days after the Director has approved a request to modify the closure plans, if the change in the closure plans increases the cost of closure. Any revised cost estimate must be adjusted for inflation as specified in 40 CFR §264.142(b).
3. The Permittee must keep at the Facility the latest closure cost estimates for the active units (East Aeration Basin and Industrial Landfill) as required by 40 CFR §264.142(d) and Permit Condition I.I.10, of this Permit.

F. FINANCIAL ASSURANCE. The Permittee shall maintain financial assurance during the closure period and comply with all applicable requirements of Subpart H of 40 CFR Parts 264 and 265. The continuing compliance should be demonstrated by providing documentation of financial assurance conforming to 40 CFR §264.151 and §265.151 in at least the amount of the cost estimates required by permit condition V.I.E. Changes in financial assurance mechanisms must be approved by the Director pursuant to 40 CFR §264.143 and §265.143.

G. LIABILITY REQUIREMENTS. The Permittee shall demonstrate continuous compliance with the requirements of 40 CFR §264.147 and the documentation requirements of 40 CFR §264.151, including requirements to have and maintain liability coverage for sudden accidental occurrences in the amount of at least \$1 million per occurrence with an annual aggregate of at least \$2 million, exclusive of legal defense costs. [40 CFR §264.147(a)]

The Permittee shall also demonstrate continuous compliance with the requirements of 40 CFR §264.147(b) and maintain liability coverage for non-sudden accidental occurrences in the amount of at least \$3 million per occurrence with an annual aggregate of at least \$6 million, exclusive of legal defense costs.

H. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS. The Permittee shall comply with 40 CFR §264.148 whenever necessary.

## **MODULE VII - POST-CLOSURE CARE**

- A. **MODULE HIGHLIGHTS.** There are at least two (2) active and two (2) closed units at the UCCLLC facility that will require Post-Closure care. These include one landfill and three surface impoundments (SIs). The landfill is the active Industrial Landfill (ILF). The three (3) surface impoundments (SIs) are the East Aeration Basin, and the two Primary Solids Ponds. All the units are located on the Puntilla peninsula in the southern part of the facility except for the Industrial Landfill which is located in the northeastern side of the facility.

The length of post-closure care for these units is planned for at least thirty (30) years except upon application and demonstration approved by the Agency that a reduced period is sufficient to protect human health and the environment.

The Permittee expects to close the West Aeration basin without waste in place. If the Permittee is not able to demonstrate “clean closure,” that unit will be subject to post-closure requirements

### **Groundwater Monitoring**

Groundwater monitoring is required during the post-closure care period. Such monitoring shall be performed pursuant to the requirements of Module VIII of this permit and any applicable approved Post Closure Plan.

- B. **UNIT IDENTIFICATION.** The Permittee shall provide post closure care for the hazardous waste management units briefly described below, subject to the terms and conditions of this permit.

B.1. Active Units

**Industrial Landfill:** The Industrial Landfill area covers 16.9 acres and has been in operation since 1975. The ILF is subdivided into three sections: Area I (2.1 acres), Area II (5.7 acres), and Area III (9.1 acres). Area II is the only area which remains active. Area I and Area III are closed.

The Landfill wastes that will continue to be disposed in Area II include construction debris, contaminated equipment, contaminated soils, and demolition debris, characteristic hazardous

waste and K022 (distillation bottom tars from the production of phenol/acetone).

The Permittee intends to expand Area II of the landfill vertically and cover the entire landfill, at the time of final closure, with a flexible membrane liner. Area II is expected to close within the next 30 years and the entire landfill will be subject to post closure care. The closure and post-closure plans are in Permit Attachment VI-1.

Surface Impoundment 2 (SI 2): Surface Impoundment 2, also referred to as both the East Aeration Basin or Aeration Basin #2, managed hazardous and non-hazardous wastes which included hazardous waste sludge and effluent from the pretreatment system. SI 2 still receives hazardous wastewater after primary treatment from chemical storage and laboratory operations, as well as from groundwater remediation activities. This unit is expected to close within the next thirty years and will be subject to post-closure care. The closure and post closure plans are set forth in Permit Attachment VI-2.

B.2. Closed Unit

Surface Impoundments 5 and 6 (SIs 5 and 6): The Surface Impoundments 5 and 6 also referred to as the West and East Primary Solids Ponds are units that have been capped with waste in place. Sludges and contaminated soils were stabilized (Permit Attachment VII-2), removed and disposed of in the Industrial Landfill. These impoundments previously stored WWTP sludges and wastes from truck washes. These wastes included hazardous waste sludge and effluent from the pretreatment system. The closure of these units is documented in the Permittee's Closure Certification Report. The Closure Certification Report, once approved, constitutes EPA's approval of the closure of these units. These units are subject to post closure care pursuant to an approved Post Closure Plan. A Closure Certification Report incorporating the Post Closure Plan is set forth in Permit Attachment VII-1.

C. POST-CLOSURE PROCEDURES AND USE OF PROPERTY.

1. The Permittee shall conduct post-closure care, including groundwater monitoring, for each hazardous waste management units listed in Permit Condition VII.B above, for a period of thirty years. Post closure care shall begin upon EPA's approval of Permittee's certification of closure and groundwater monitoring plan. Permittee may submit an application for a reduced period of closure which may be granted if the Agency finds the reduced period is sufficient to protect human health and the environment. The Director may also extend the post closure period if that is necessary

to protect human health and the environment. (40 CFR §264.117(a)).

2. The Permittee shall maintain and operate the groundwater monitoring system to comply with all applicable requirements of 40 CFR Part 264, Subpart F, and the requirements of Permit Attachments VI-1 and VI -2, Permit Attachment VII-1, and Permit Module VIII [Groundwater] during the post-closure period of this Permit.
3. The Permittee shall comply with all Post-closure requirements for surface impoundments listed in permit conditions VII.B, above as follows and in accordance with Permit Attachment VII-1 and Permit Attachments VI-2: [40 CFR §264.228(b)]
  - (a) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap, as necessary, to correct the effects of settling, subsidence, erosion, and other events; [40 CFR §264.228(b)(1)]
  - (b) Maintain the integrity and effectiveness of the groundwater monitoring system, including repair of wells as necessary to obtain representative samples; [40 CFR §264.228(b)(3)]
  - (c) Prevent run-on and run-off from eroding or otherwise damaging the final cover; [40 CFR §264.228(b)(4)]
  - (d) Maintain a vegetative cover over closed units;
  - (e) Protect and maintain surveyed benchmarks used to comply with 40 CFR §264.309; and
  - (f) In response to a release of waste from the surface impoundments as a result of storm wave action, the Permittee shall implement the following, in addition to the standard responses to a spill or other release of hazardous wastes specified in the Contingency Plan (Permit Attachment II-5):
    - (i) The Permittee shall provide an overall preliminary assessment of the release, including photographs and analyses of soil and water samples in the vicinity of the release (if available) and an estimate of the volume of waste released to the environment, in writing, within two weeks after the release occurred.

- (ii) The Permittee shall submit a plan for sampling and analysis of soil and water samples adequate to determine the extent of contamination, including all hazardous constituents which may be present in the released wastes. The plan shall be submitted to EPA for approval or modification, at the same time as the preliminary release assessment. The Permittee shall implement the sampling and analysis plan as directed by EPA.
  - (iii) The Permittee shall prepare additional release assessment and corrective measure plans as directed by EPA.
- 4. The Permittee shall comply with all Post-closure requirements for landfill units listed in permit conditions VII.B, above as follows and in accordance with Permit Attachment VI-1: [40 CFR §264.310(b)]
  - (a) Maintain the integrity and effectiveness of the final cover, including making repairs to the cap, as necessary, to correct the effects of settling, subsidence, erosion, and other events; [40 CFR §264.310(b)(1)]
  - (b) Maintain the integrity and effectiveness of the groundwater monitoring system, including repair of wells as necessary to obtain representative samples; [40 CFR §264.310(b)(4)]
  - (c) Prevent run-on and run-off from eroding or otherwise damaging the final cover; and [40 CFR §264.310(b)(5)]
  - (f) Protect and maintain surveyed benchmarks used to comply with 40 CFR §264.309.[40 CFR §264.310(b)(6)]
- 5. The Permittee shall comply with all post-closure security requirements, as specified in Permit Attachments VI-1 and VI -2, Permit Attachment VII-1 and in accordance with 40 CFR §264.117(b).
- 6. The Permittee shall not allow any use of the units designated in Permit Condition VII.B which will disturb the integrity of the final cover, liners, any components of the containment system, or the function of the facility's monitoring systems during the post-closure care period. [40 CFR §264.117(c)]

Any disturbance to the structure will only be allowed if the Director finds that the change:

a) is necessary to the proposed use of the property, and will not increase the potential hazard to human health or the environment; or [40 CFR §264.117(c)(1)]

b) is necessary to reduce a threat to human health or the environment. [40 CFR §264.117(c)(2)]

7. The Permittee shall implement the post-closure plans and Closure Certification Reports, Permit Attachments VI-1 and VI -2, Permit Attachment VII-1. All post-closure care activities must be conducted in accordance with the specific provisions of the approved Post-Closure Plan or Closure Certification Report for each subject unit. [40 CFR §264.117(d) and §264.118(b)]

D. INSPECTIONS. The Permittee shall inspect the components, structures and equipment at the site in accordance with the Inspection Schedules contained in Permit Attachment VI-1 and VI -2, Permit Attachment VII-1 and be in continuous compliance with 40 CFR § 264.15. The Permittee shall remedy any deterioration or malfunction discovered by an inspection (when and as required by 40 CFR § 264.15(c). Records of inspections shall be kept as required by 40 CFR § 264.15(d). At a minimum, this inspection schedule must include the following:

1. Inspecting all monitoring equipment, safety and emergency equipment, security devices, loading and unloading areas, and operating and structural equipment to be used for preventing, detecting, or responding to environmental or human health hazards, as required by 40 CFR § 264.15(b)(1);
2. Inspect the integrity of all cover systems, leak detection and groundwater monitoring and recovery systems.
3. The schedule must identify the types of problems which must be evaluated during the inspection, as required by 40 CFR § 264.15(b)(3);
4. The frequency of inspection, which is based on the rate of possible deterioration of the equipment and the probability of an environmental or human health incident if the deterioration, malfunction, or any operator error goes undetected between inspections. Areas subject to spills, such as loading and unloading areas, must be inspected daily

when in use; and

5. The specific remedy to be implemented when inspections disclose problems.

E. NOTICES AND CERTIFICATION

1. No later than 60 days after certification of closure of each permitted hazardous waste disposal unit (surface impoundments and landfills), the Permittee shall submit to the local zoning authority, or the authority with jurisdiction over local land use, and to the Director a record of the type, location, and quantity of hazardous wastes disposed of within each cell or other disposal unit at the facility. [40 CFR §264.119(a)]
2. Within 60 days of the certification of closure of each hazardous waste disposal unit, the Permittee shall:
  - (a) Record, in accordance with the Commonwealth of Puerto Rico law, a notation on the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity, notify any potential purchaser of the property that: [40 CFR §264.119(b)(1)]
    1. The land has been used to manage hazardous wastes; [40 CFR §264.119(b)(1)(i)]
    - (ii) Its use is restricted under 40 CFR Part 264, Subpart G regulations; and [40 CFR §264.119(b)(1)(ii)]
    - (iii) The survey plat and record of the type, location, and quantity of hazardous wastes disposed within each cell or other hazardous waste disposal unit of the facility, have been filed with the Director and the local land use authority or the authority with jurisdiction over local land use. [40 CFR §264.119(b)(1)(iii)]
  - (b) Submit a certification to the Director, signed by the Permittee, that he has recorded the notation specified in Permit Condition VII.E.2.a., including a copy of the document in which the notation has been placed. [40 CFR §264.119(b)(2)]
3. If the Permittee or any subsequent owner or operator of the land upon which the hazardous waste disposal units are located, wishes to remove hazardous wastes and

hazardous waste residues, the liner (if any), or contaminated soil, he shall request a modification to this post closure permit in accordance with the applicable requirements in 40 CFR Parts 124 and 270. The Permittee or any subsequent owner or operator of the land shall demonstrate that the removal of hazardous wastes will satisfy the criteria of 40 CFR §264.117(c). If approval is granted for the removal activities, the Permittee or any subsequent owner or operator may request that the Director approve either: [40 CFR §264.119(c)]

- (a) Removal of the notation on the deed to the facility property or other instrument normally examined during title search; or [40 CFR §264.119(c)(1)]
  - (b) The addition of a notation to the deed or instrument indicating subsequent removal of the hazardous waste. [40 CFR §264.119(c)(2)]
4. No later than 60 days after completion of the established post-closure care period for each hazardous waste disposal unit, the Permittee shall submit to the Director, by registered mail, a certification that the post-closure care for the hazardous waste disposal unit was performed in accordance with the specifications in the approved Post-Closure Plan. The certification must be signed by the Permittee and an independent registered professional engineer. Documentation supporting the independent registered professional engineer's certification must be furnished to the Director upon request until the Director releases the Permittee from the financial assurance requirements for post-closure care under 40 CFR §264.145(i). [40 CFR §264.120]

F. POST-CLOSURE PERMIT MODIFICATIONS.

The Permittee must request a permit modification to authorize a change in any of the approved Post-Closure Plans or Closure Certification Reports. This request must be in accordance with applicable requirements of 40 CFR Parts 124 and 270, and must include a copy of the proposed amended Post-Closure Plan for approval by the Director. The Permittee shall request a permit modification whenever changes in operating plans or facility design affect the post-closure plans or closure certification reports, or other events occur during the active life of the operating units that affects the approved Post-Closure Plans. The Permittee must submit any written request for a permit modification at least sixty (60) prior to the proposed change in facility design or operation, or no later than sixty (60) days after an unexpected event has occurred which has affected the Post-Closure Plans or Closure Certification Reports. [40 CFR §264.118(d)]

- G. COST ESTIMATE: The Permittee's post-closure cost estimates prepared in accordance with §264.144(a) as specified in Permit Attachment VI-1 and VI -2, and Permit Attachment VII-1 shall be up-dated annually.
1. During the active life of the Facility, the Permittee must adjust the post-closure cost estimates for inflation annually, within 30 days (the Permittee is using the financial test and corporate guarantee) after the close of the Permittee's fiscal year and before the submission of updated information to the Director as specified in 40 CFR §264.145(f)(5). The adjustment to the post-closure cost estimates must be made in accordance with the requirements of 40 CFR §264.144(b).
  2. The Permittee must revise the post-closure cost estimates no later than thirty (30) days after the Director has approved a request to modify the post-closure plans, if the change in the post-closure plans increases the cost of post-closure. Any revised cost estimate must be adjusted for inflation as specified in 40 CFR §264.144(b).
  3. The Permittee must keep at the Facility the latest post-closure cost estimates for the active units (East Aeration Basin and Industrial Landfill) as required by 40 CFR §264.144(d) and Permit Condition I.I.10, of this Permit.
- H. FINANCIAL ASSURANCE FOR FACILITY POST-CLOSURE. The Permittee shall maintain financial assurance during the post-closure period and comply with all applicable requirements of Subpart H of 40 CFR Parts 264 and 265. The continuing compliance should be demonstrated by providing documentation of financial assurance conforming to 40 CFR §264.151 and §265.151 in at least the amount of the cost estimates required by permit condition VII.G. Changes in financial assurance mechanisms must be approved by the Director pursuant to 40 CFR §264.145 and §265.145.
- I. INCAPACITY OF OWNERS OR OPERATORS, GUARANTORS, OR FINANCIAL INSTITUTIONS. The Permittee shall comply with 40 CFR §264.148 whenever necessary.

**MODULE VIII - GROUNDWATER MONITORING FOR REGULATED WASTE  
MANAGEMENT UNITS AND ASSOCIATED SWMUS**

A. **MODULE HIGHLIGHTS.** The goal of the groundwater monitoring requirements of this Module is to ensure prompt detection and recovery of any contaminant leakage from the operating hazardous waste management units, as well as closed units, which require post-closure care and/or monitoring. For the purposes of implementing the groundwater monitoring requirements of this Module, the operating hazardous waste management units, post-closure units, and associated SWMUs have been grouped into three Monitoring Groups:

1. The Puntilla Waste Management Area (including seven contiguous hazardous and/or solid waste management units: the Aeration Basin No. 1, the Aeration Basin No. 2, the Equalization Basin No. 1, the Equalization Basin No. 2, the Dewatered Sludge Landfill, the Primary Solids Pond No. 1, and the Primary Solids Pond No. 2.);
2. the Industrial Landfill Waste Management Area (including four contiguous hazardous and/or solid waste management units: the Industrial Landfill, the Dripolene Pond, and the Stormwater Retention Basin and the filled portion of the North Cooling Water Return Lateral Canal); and
3. the Ground Burner Waste Management Area (including the Ground Burner).

The groundwater compliance monitoring requirements of this Module take into account the geological and hydrogeological complexity of the site, and the existence of a plume of phase separated hydrocarbons (PSH) floating on the groundwater in the vicinity of the Industrial Landfill Waste Management Area.

These groundwater requirements are consistent with the requirement set forth in the Post Closure Plans attached to this Permit.

The monitoring groups are described below:

<u>Monitoring Group</u>	<u>Operating Hazardous Waste Management Units</u>	<u>Closing and Closed Units and Associated SWMUs</u>
Puntilla Waste Management Area	Aeration Basin No. 2 (East Aeration Basin)	Aeration Basin No. 1 (West Aeration Basin), Equalization Basin No. 1, Equalization Basin No. 2, Dewatered Sludge Landfill, Primary Solids Pond No. 1, Primary Solids Pond No. 2
Industrial Landfill Waste Management Area	Industrial Landfill	Dripolene Pond, Stormwater Retention Basin, and filled portion of the North Cooling Water Return Lateral Canal
Ground Burner Area		Ground Burners

A total of 14 downgradient, and one upgradient, wells are required for the above three Monitoring Groups, and are listed in Permit Condition VIII.B.1., below. These fourteen downgradient wells constitute the points of compliance.

All 15 compliance wells plus PSH monitoring wells M-7, NW-2S and NW-2D are shown in Permit Attachment VIII-1 (Maps of Locations of Groundwater Monitoring Wells of the Puntilla Waste Permit Attachment Management Area and the Ground Burner Area) and Permit Attachment VIII-2 (Map of Locations of Groundwater Monitoring Wells of the Industrial Landfill Waste Management Area).

B. WELL LOCATION, MAINTENANCE, AND POINT OF COMPLIANCE. The Permittee shall install and maintain a groundwater monitoring system as specified below:

1. The Permittee shall maintain compliance wells, as listed below at the locations shown in Permit Attachment VIII-1 (Map of Locations of Groundwater Monitoring Wells of the Puntilla Waste Management Area and the Ground Burner Area) and Permit Attachment VIII-2 (Map of Locations of Groundwater Monitoring Wells of the Industrial Landfill Waste Management Area), and shall sample and analyze the groundwater in those wells pursuant to procedures described in Permit Attachment

VIII-3 (Puntilla Waste Management Area Groundwater Sampling and Analysis Plan [Puntilla SAP]) and in Permit Attachment VIII-4 (Industrial Landfill Waste Management Area Groundwater Sampling and Analysis Plan [Industrial Landfill SAP])

- a. The Puntilla Waste Management Area compliance wells and the waste units they are associated with are:

Unit	Compliance Wells
Primary Solids Ponds (SWMU No.22)	B-1; P-23
Dewatered Sludge Landfill (SWMU No. 21)	B-10; B-17
West Aeration Basin (SWMU No. 25)	B-13; PBW-5
Equalization Basins (SWMU No. 23)	PBW-6; B-15(or replacement well)

- (1) All above wells, with the exception of wells PBW-6 and B-15, shall be sampled and analyzed annually pursuant to the Puntilla SAP and Permit Attachment VIII-5 (the RCRA Part B Permit Renewal Application Amendment, Volume III, Part 1 Groundwater Monitoring [March 3, 2000]).
- (2) Wells PBW-6 and B-15 will be sampled and analyzed semi-annually pursuant to the Puntilla SAP, Permit Attachment VIII-5 (the RCRA Part B Permit Renewal Application Amendment, Volume III, Part 1 Groundwater Monitoring [March 3, 2000]), and Attachment VIII-1 (Map of Locations of Groundwater Monitoring Wells of the Puntilla Waste Management Area and the Ground Burner Area), and in accordance with 40 C.F.R. 264.99(f)-(g). If three years of consecutive monitoring shows that the groundwater contamination remains below the Groundwater Protection Standards ("GPS") set forth in Section C, below, and in accordance with 40 C.F.R. 264.100(f), the Permittee may submit an application to EPA regarding permission to terminate monitoring, in accordance with 40 C.F.R. 264.96(c) and 40 C.F.R. 270.42. Monitoring shall continue until EPA provides written notice authorizing termination.

- (3) Because of the influence of tidal effects in this area, there are no background wells for the Puntilla Waste Management Area. All the above wells are compliance wells.
  - (4) Based on the results of ten years of Compliance Monitoring between March 1990 and July 2000, the following wells are no longer required to be monitored as compliance wells: B-7, B-11, PBW- 1, PBW- 2, PBW- 3, PBW- 4, PBW- 7, PBW- 8, PBW- 9, and P-23
- b. For the Industrial Landfill (ILF) Waste Management Area, Compliance monitoring shall be implemented at the following compliance wells: F-16OW, F-17, P-1, D-14A, and background (upgradient) well F-22.
- (1) The above wells shall be sampled and analyzed pursuant to the Industrial Landfill Waste Management Area Groundwater Sampling and Analysis Plan (Permit Attachment VIII-4) and Permit Attachment VIII-5 (the RCRA Part B Permit Renewal Application Amendment, Volume III, Part 1 Groundwater Monitoring [March 3, 2000]) on an annual basis.
  - (2) Based on the results of ten years of groundwater monitoring between March 1990 and July 2000, the following wells are no longer required to be monitored as compliance wells: F-1, F-2, F-19, D-16, and SW-7.
  - (3) Recovery wells, operated for the purpose of groundwater hydraulic containment and free phase recovery in the ILF area, are R-2, R-3, R-6, R-7, and R-8. Water levels, PSH thickness and elevation in these wells will continue to be measured annually for the purpose of confirming whether the plume of contaminated groundwater in the area of the Industrial Landfill is being captured.
  - (4) The mass of recovered PSH will be calculated on an annual basis. In addition, the mass of each detected contaminant within the dissolved phase of the recovered groundwater will be calculated, on an annual basis, by multiplying the average concentration of each dissolved contaminant times the volume of recovered contaminated groundwater. These results shall be reported annually.

- (5) The following wells shall be used to monitor groundwater water levels: D-7A, D-11, D-12, D-13, D-14A, D-16, F-1, F-16-OW, F-17, H-4, P-1, P-2B, P-3A, P-4A, R-2, R-3, R-8, and R-9. Wells D-7A, D-11, D-12, D-13, D-16, F-1, F-17, H-4, P-2B, P-3A and P-4A are not currently being used for groundwater monitoring, for the purpose of compliance, or recovery.
- c. For the Ground Burner Area, Monitoring shall be implemented at the following compliance wells: G-S; G-N.
  - (1) These wells shall be sampled and analyzed semi-annually pursuant to the Puntilla Waste Management Area Groundwater Sampling and Analysis Plan (Permit Attachment VIII-3), Permit Attachment VIII-5 (the RCRA Part B Permit Renewal Application Amendment, Volume III, Part 1 Groundwater Monitoring [March 3, 2000], Permit Attachment VI-6 (the Revised Closure Plan to the Ground Burners (SWMU #26) [October 31, 1986]); and shall be located pursuant to Permit Attachment VIII-6 (UCCLLC's Letter dated May 6, 1999).
  - (2) If, at the end of three years of monitoring, the groundwater contamination is below the GPS, the groundwater monitoring shall be evaluated to determine whether the compliance period shall continue.
  - (3) At the end of the three years period evaluation period, UCCLLC may submit an application to EPA regarding its permission to terminate monitoring. Monitoring shall continue until EPA provides written notice authorizing termination.
2. The Permittee shall maintain all compliance and background wells listed in Permit Condition VIII.B.1., above, in accordance with the specifications in Permit Attachment VIII-3 (Puntilla Waste Management Area Groundwater Sampling and Analysis Plan) and Permit Attachment VIII-4 (Industrial Landfill Waste Management Area Groundwater Sampling and Analysis Plan). If any of these compliance wells are accidentally damaged or destroyed, the Permittee shall replace each damaged or destroyed well with a new well of at least equivalent design in the immediate vicinity of the location of the damaged or destroyed well. The terms and conditions of this Permit, applicable to any compliance well, apply with equal force to any replacement well

installed pursuant to this subparagraph.

3. The respective point of compliance for each of the Monitoring Groups listed in Condition VIII.B.1 above, shall be defined by a vertical surface that intersects all the compliance wells listed for that Monitoring Group in Condition VIII.B.1 above.
4. The Permittee shall plug and abandon all wells which are damaged or destroyed, or wells which are removed from the monitoring programs for other reasons, in accordance with EPA's RCRA Ground-Water Monitoring: Draft Technical Guidance, Office of Solid Waste (November 1992).
5. Length of Monitoring:
  - a. Unless explicitly stated otherwise, monitoring shall occur for a period of thirty years in accordance with 40 CFR § 264.117(a)(1). This period of time may be shortened or lengthened, upon the discretion of the Regional Administrator, for each monitoring group or for any regulated unit within each group in accordance with 40 CFR § 264.117(a)(2).
  - b. With respect to non-regulated units within any of the monitoring groups, monitoring must continue for a minimum period of three years. If groundwater contamination is below the GPS for three consecutive years, the Permittee may submit an application to EPA regarding its permission to terminate monitoring for that particular unit. The Permittee's application must demonstrate that the monitoring data is related solely to the non-regulated unit. Failure to demonstrate that the monitoring is related solely to the non-regulated unit will necessitate continued monitoring pursuant VIII.6.a. above.

C. CONSTITUENTS TO BE MONITORED AND GROUNDWATER PROTECTION STANDARDS.

1. Requirements.
  - a. For each Monitoring Group, the Permittee shall analyze the groundwater in the compliance wells listed in Condition VIII.B.1 above for all monitoring constituents listed below for that Monitoring Group.

- b. Following each sampling event, the Permittee shall determine for all constituents listed below for the respective Monitoring Group, whether the measured concentration of any constituent in each compliance well for that Monitoring Group exceeds the applicable risk-based groundwater protection standard (GPS) concentration for that constituent, as listed below:

- (1) For the Puntilla Waste Management Area Monitoring Group compliance wells listed in Condition VIII.B.1.a, the monitoring constituents and their respective GPS concentrations, are:

Acenaphthene	65 ppb	Fluoranthene	128 ppb
Acenaphthylene	81 ppb	2-Methylnaphthalene	546 ppb
Anthracene	28 ppb	Naphthalene	5000 ppb
Benzene	5000 ppb	Phenanthrene	145 ppb
Ethylbenzene	1019 ppb	Pyrene	22 ppb
Fluorene	109 ppb	Xylenes	1380 ppb

ppb = parts per billion

The inclusion of these constituents was determined based on the results of ten years of quarterly groundwater monitoring between March 1990 and July 2000. The above constituents are those that have exceeded their respective GPS concentrations at least once in well PBW-6, the only well specified in the 1988 permit which has had detections of the groundwater monitoring parameters since 1993. Since no exceedence of the GPS concentrations have been recorded during the prior seven years of monitoring, monitoring for the following constituents is no longer required: Toluene, Chrysene, Benzo(a)anthracene, Acetophenone, Styrene, and 4-Nitrophenol.

- (2) For the Industrial Landfill Waste Management Area Monitoring Group wells, the monitoring constituents and their respective GPS concentrations are:

Acenaphthene	65 ppb	Fluorene	120 ppb
Acenaphthylene	1200 ppb	2-Methylnaphthalene	546 ppb
Anthracene	28 ppb	Naphthalene	5000 ppb

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Benzo(a)anthracene	PQL	Phenanthrene	140 ppb
Benzene	10,000 ppb	Pyrene	22 ppb
Chrysene	PQL	Styrene	PQL
Ethylbenzene	4700 ppb	Toluene	10,000 ppb
Fluoranthene	60 ppb	Xylenes	1380 ppb

PQL = practical quantification limit  
 ppb = parts per billion

The inclusion of these constituents was determined based on the results of ten years of quarterly groundwater monitoring, from March 1990 and July 2000. The above constituents are those that have exceeded their respective GPS concentrations at least once in any of the monitored wells. Since no exceedence of their GPS concentrations have been recorded during the prior ten years of monitoring, monitoring for the following constituents is no longer required: Acetophenone and 4-Nitrophenol.

- (3) For the Ground Burner Area Monitoring Group wells, the monitoring constituents and their respective GPS concentrations are the same as for the Puntilla Waste Management Area Monitoring Group, with the addition of the metal constituents in 40 CFR 264.94 Table 1, specified below:

Arsenic	0.05 mg/l	Lead	0.05 mg/l
Barium,	1.0 mg/l	Mercury	0.002 mg/l
Cadmium	0.01 mg/l	Selenium	0.01 mg/l
Chromium	0.05 mg/l	Silver	0.05 mg/l

mg/l = milligrams per liter.

- c. All other constituents listed in 40 CFR 264 Appendix IX shall be measured annually in all compliance and background wells listed in Condition VIII.B, above, for all Monitoring Groups. The Permittee shall compare the measured concentration of each constituent relative to its respective background level, pursuant to procedures given in the 40 CFR Part 264.97, and report all measurements and statistically significant increases (SSIs) in concentration

relative to respective background level for that Monitoring Group. For the Puntilla Waste Management Area, because no background wells can be established locally, all measurement concentrations and all SSIs in concentration will be done relative to the background well established for the Industrial Landfill Waste Management Area.

The type of statistical test to be applied to the compliance well sample analyses is to be determined by the character of the background data for each parameter. Under this Permit, three different types of tests may be applied to compliance well sample analyses data for different parameters, depending mainly on the normal or non-normal distribution, and the percentage of “non-detect” or “below detection limit” determinations in the background data for each parameter. Screening of the background data after each round of samples is analyzed will be performed to determine the best type of test to use. The different tests and the procedure for selecting the appropriate procedure are described in 40 CFR Part 264.97.

- d. The Permittee shall submit a report on all sample collection, analysis, and statistical evaluations required by Permit Condition VIII.C, within 120 days after completion of sample collection. The report shall include a discussion of all exceedence of the applicable GPS concentrations, as listed in Condition VIII.C.1 above, and all SSIs measured for constituents for which no GPS is listed in Condition VIII.C.1.
- e. If during the annual Appendix IX sampling required above, an SSI above its respective background concentration is measured for any constituent not identified in Condition VIII.C.1 above, the Permittee shall follow procedures given in Condition VIII.F below.

2. Samples.

Upon request, the Permittee shall allow EPA, or a duly designated representative, to obtain samples from compliance wells during sampling activities required by this Permit.

- D. SAMPLING AND ANALYSIS PROCEDURES. The Permittee shall use the techniques and procedures in Permit Attachment VIII-3 (Puntilla Waste Management Area Groundwater Sampling and Analysis Plan) and Permit Attachment VIII-4 (Industrial Landfill Waste Management Area Groundwater Sampling and Analysis Plan) for obtaining and analyzing samples from each compliance well listed in Permit Condition VIII.B.1. The Puntilla SAP will

apply to the wells for the Ground Burner Waste Management Area.

E. ELEVATION OF THE GROUNDWATER SURFACE

1. The Permittee shall determine the elevation of the groundwater surface at each compliance and background well listed in Permit Condition VIII.B, including those recovery wells not being actively used for recovery, in accordance with Permit Attachment VIII-3 (Puntilla Waste Management Area Groundwater Sampling and Analysis Plan), Permit Attachment VIII-4 (Industrial Landfill Waste Management Area Groundwater Sampling and Analysis Plan) and Attachment VIII-1 (Map of Locations of Groundwater Monitoring Wells of the Puntilla Waste Management Area and the Ground Burner Area) each time the groundwater is sampled.
2. The Permittee shall record the surveyed elevation of each new or replacement well installed pursuant to Condition VIII.B.2., in the same manner as recorded for the wells identified in Permit Condition VIII.B.1.
3. The Permittee shall determine the groundwater flow rate and direction for each Monitoring Group and submit maps and other data depicting the groundwater flow rate and direction for each Monitoring Group annually.

F. ACTIONS FOLLOWING DETERMINATION OF EXCEEDENCE OF GROUNDWATER PROTECTION STANDARD OR STATISTICALLY SIGNIFICANT INCREASE

1. For all compliance wells listed in Permit Condition VIII.B, if the Permittee determines that there is an exceedence of the respective GPS concentration for any parameter specified in Permit Condition VIII.C.1, or an SSI has been measured for an Appendix IX constituent that is not listed in Permit Condition VIII.C.1:
  - a. the Permittee shall notify the Director in writing of the exceedence of the GPS concentration or of the SSI determination within seven days of that determination, and
  - b. if the Permittee wishes, the Permittee may re-sample the groundwater in any wells where an SSI has been measured, in the initial sample results, for an Appendix IX constituent that is not listed in Permit Condition VIII.C.1, subject to the following:
    - (1) sample collection must be completed within five weeks of determination of an exceedence of the applicable GPS concentration or an SSI, and

- (2) the preliminary (i.e., “unvalidated”) constituent concentration analysis for this re-sampling must be completed within five weeks of sample collection.
2. Any constituents with no applicable GPS listed in Condition VIII.C.1 above for which an SSI is confirmed in the second analysis pursuant to Condition VIII.C.1., or any constituents identified in the initial Appendix IX analysis under Section VIII.C.1. above for which the Permittee does not resample under that Condition, shall be included in the list of hazardous constituents monitored for the existing Compliance Monitoring program, or be added to the list of hazardous constituents monitored under Condition VIII.C above, for the respective Monitoring Unit where the SSI was measured.
3. The Permittee shall submit a full report to the Director, within 120 days of completion all sample collection activities, on the analytical results obtained under this section, including data validation and a discussion of all exceedence of applicable GPS concentrations and measured SSIs.
4. If the Permittee determines that there is an exceedence of the GPS concentration for a constituent listed in Condition VIII.C.1 or an SSI above the background value(s) for any parameter(s) not specified in Permit Condition VIII.C.1, it may demonstrate that a source other than any unit within any of the monitoring groups (these units are listed in chart in Section VIII.A of this permit) caused the increase, or that the increase resulted from an error in sampling, analysis or evaluation. In such cases, the Permittee shall:
  - a. notify the Director in writing, concurrently with the notification required under Condition VIII.F.1.(a), that it intends to make such a demonstration;
  - b. within 90 days of the determination of an exceedence of an applicable GPS concentration for a constituent listed in Condition VIII.C or determination of an SSI pursuant to Condition VIII.C.1, submit a report to the Director which demonstrates, subject to the Director’s review and approval, that a source other than a unit identified within the monitoring groups caused the contamination that resulted in the SSI, or that the SSI resulted from error in sampling, analysis or evaluation;
  - c. if the submitted demonstration shows that a source other than a unit identified within the monitoring groups caused the exceedence of the GPS concentration for a constituent listed in Condition VIII.C or the SSI, the Permittee shall also submit, within 90 days of the determination of an SSI pursuant to Condition

VIII.C.4, an application for a permit modification to make appropriate changes to the corrective action program for solid waste management units at the Facility, implemented pursuant to Module III of this Permit; or

- d. within 90 days of the determination of an exceedence of an applicable GPS concentration for a constituent listed in Condition VIII.C or of an SSI pursuant to Condition VIII.C.4, submit to the Director an application for a permit modification to commence a Compliance Monitoring program, and if the exceedence is of an applicable GPS concentration, to commence or modify a corrective action program to achieve compliance with the applicable GPS concentrations.
5. If an exceedence of the GPS concentration or an SSI is confirmed, the Permittee shall modify the permit in accordance with Section VIII.G.

G. ADDITIONAL COMPLIANCE MONITORING

1. If an exceedence of the GPS concentration or an SSI is confirmed, the Permittee shall submit an application for a permit modification to modify the Compliance Monitoring program to meet the requirements of 40 CFR § 264.99. This requirement shall not apply to the Industrial Landfill Waste Management Area unless EPA determines that the existing system for hydraulic containment and PSH recovery fails to operate effectively.
2. If in implementing the sampling required, the Permittee detects any Appendix IX constituent in the groundwater that is not exempt pursuant to Section VIII.F., the Permittee shall submit an application for a permit modification to modify the Compliance Monitoring program to meet the requirements of 40 CFR § 264.99.
3. The application for the permit modification to establish a Compliance Monitoring program must include the following:
  - a. The identification and concentration of each Appendix IX constituent determined pursuant to Conditions VIII.C. above, to be present in the groundwater in all the compliance and background wells of the Compliance Monitoring Group where the original exceedence of the GPS concentration or SSI occurred.
  - b. Any proposed changes to the groundwater monitoring system at the Facility necessary to meet the requirements of compliance monitoring as specified in 40 CFR § 264.99, including the requirement that the Permittee annually sample and

analyze the groundwater for all Appendix IX constituents at all the compliance and background wells of the Compliance Monitoring Group where the original exceedence of the GPS concentration or SSI was detected.

- c. Any proposed changes to the monitoring frequency, sampling and analysis procedures or methods, or statistical procedures used at the Facility, as necessary to meet the requirements of compliance monitoring as described in 40 CFR § 264.99. (40 CFR § 264.98[g][4][iii])
- d. A proposed GPS concentration limit pursuant to 40 CFR § 264.94(a), or an alternate concentration limit (“ACL”) pursuant to 40 CFR § 264.94(b), for each Monitoring Group where an SSI has been determined, and for each Appendix IX constituent determined to be present in the compliance wells of that Monitoring Group. (40 CFR § 264.98[g][4][iv])
- e. All data necessary to justify any ACLs requested under Condition VIII.G.3.(d), above. (40 CFR § 264.98[g][5][i])
- f. An engineering feasibility plan for a corrective action program necessary to meet the requirements of 40 CFR § 264.100, unless:
  - (1) All Appendix IX constituents found at detectable concentrations in the analyses required by Permit Condition VIII.C are listed in Table 1 of 40 CFR § 264.94, and their measured concentrations do not exceed the respective values given in that Table; or
  - (2) The sampling conducted pursuant to Permit Conditions VIII.F.1(b) and VIII.F.2 detected one or more Appendix IX constituents listed in Table 1 of 40 CFR § 264.94 at a concentration(s) exceeding the values listed in that Table, but for which the Permittee has filed notice under Condition VIII.G.3(d) that it requests an ACL(s), pursuant to 40 CFR § 264.94. (40 CFR § 264.98[g][5][ii])
- g. If EPA does not approve all the ACLs requested under Permit Condition VIII.G.3.(d) for the Appendix IX constituents found at concentrations exceeding background and their respective values listed in Table 1 of 40 CFR § 264.94, the Permittee shall submit the engineering feasibility plan for a corrective action program necessary to meet the requirements of 40 CFR § 264.100, within 90 calendar days of the date of a written determination from EPA disapproving the requested ACLs.

4. The Director will specify in his approval of the permit modification requested under VIII.G.3 above, the sampling procedures and frequency under the Compliance Monitoring program and shall further specify the groundwater protection standard, and the Monitoring Group(s) to which the groundwater protection standard shall apply. The groundwater protection standard shall include the following:
  - a. the list of hazardous constituents to be monitored under the Compliance Monitoring program,
  - b. the concentration limits, including any ACLs if approved by EPA, for each of the hazardous constituents to be monitored under the compliance monitoring program,
  - c. the point of compliance applicable under the compliance monitoring program, and
  - d. the compliance period, including the commencement date, during which the compliance monitoring program groundwater protection standard applies. (40 CFR § 264.99[a])
5. If the Permittee determines, pursuant to the compliance monitoring program implemented pursuant to Condition VIII.G.4, that any groundwater protection standard concentration limit, set pursuant to Condition VIII.G.4, has been exceeded at any compliance well at a Monitoring Group's point of compliance set pursuant to Condition VIII.G.4, the Permittee, within seven days of such determination, shall:
  - a. notify the Director in writing of this finding. The notification must specify what concentration limits have been exceeded, and in which wells. (40 CFR § 264.99[h][1]);
  - b. concurrently notify the Director in writing, if the Permittee intends to demonstrate that the groundwater protection standard concentration limit exceedance(s) is (are) due to an error, or a non-regulated unit (40 CFR § 264.99[i][1]); and
  - c. comply with Permit Condition VIII.H below, unless the Permittee has timely notified the Director of its intent to make an outside source demonstration as provided in subparagraph (b) immediately above.
6. In making the demonstration authorized by Permit Condition VIII.I.4(b) above, the

Permittee shall comply with the requirements of 40 CFR § 264.99(i)(2) - (4). If EPA rejects the Permittee's demonstration, then the Permittee shall proceed to comply fully with Permit Condition VIII.H, and shall comply with Condition VIII.H.1 by submitting an application for a permit modification to establish a corrective action program meeting the requirements of 40 CFR § 264.100 within 90 calendar days after the date of the written notification from EPA disapproving the Permittee's demonstration.

7. If EPA has previously approved a demonstration, pursuant to Conditions VIII.G.5(b) and 6 above, that an exceedence of a groundwater protection standard concentration limit was caused by a source other than a regulated unit (including other SWMUs and non-waste units at the Facility, or sources outside the facility), and if a subsequent exceedence is determined for that same constituent and at the same compliance well, the Permittee may request in writing, concurrently with the notification required under Condition VIII.G.5(b) above, that EPA exempt the Permittee from the requirements of Conditions VIII.G.6 and VIII.H for that particular exceedence. If the Director approves that request in writing, the Permittee does not need to implement the requirements of Conditions VIII.G.6 and VIII.H for that particular exceedence.

H. CORRECTIVE ACTION FOR RELEASES FROM REGULATED UNITS If the Permittee determines, pursuant to Condition VIII.G.5 above, that any GPS concentration has been exceeded at any compliance well at the point of compliance, set pursuant to Condition VIII.B above:

1. The Permittee shall submit an application for a permit modification to the corrective action program meeting the requirements of 40 CFR § 264.100 within ninety days of the above determination (40 CFR § 264.99[h][2]). This requirement shall not apply to the Industrial Landfill Waste Management Area unless EPA determines that the existing system for hydraulic containment and PSH recovery fails to operate effectively.
2. The permit modification application must at a minimum include the following information:
  - a. a detailed description of the corrective actions proposed to achieve compliance with the groundwater protection standard(s) set pursuant to Condition VIII.G.5 above;
  - b. a plan for a groundwater monitoring program that will demonstrate the effectiveness of the corrective action program (40 CFR § 264.99[h][2]); and
  - c. a compliance schedule.

3. The Director, in his approval of any permit modification requested pursuant to Condition H.1, will specify the corrective action program (40 CFR § 264.100), including:
  - a. the specific corrective action(s) to be implemented,
  - b. the groundwater protection standard(s) applicable under the corrective action program (40 CFR § 264.100[a]), including:
    - (1) the list of the hazardous constituents to which the corrective action program applies,
    - (2) the concentration limit(s) to be achieved for all hazardous constituents listed above, and
    - (3) the compliance point at which the above concentration limits are to be achieved.
  - c. the compliance period, including when implementation shall commence,
  - d. the groundwater monitoring program to be implemented to demonstrate the effectiveness of the corrective action program, and
  - e. any additional actions necessary to comply with 40 CFR § 264.100(e)-(g).

I. RECORD KEEPING AND REPORTING

1. The Permittee shall enter all monitoring, testing and analytical data obtained in accordance with the terms of this Module in the Facility's operating record (40 CFR § 264.97[j]).
2. Unless specified elsewhere in this Module, the Permittee shall submit a full report on the results of any data collected pursuant to the requirements of this Module, including data validation reports and the results of any statistical analysis required, within 90 days after completion of any required sample collection or groundwater elevation measurement.
3. All reports required under this module shall be certified pursuant to requirements given at 40 CFR § 270.11(b).

J. DETERMINATION OF INADEQUATE PROGRAM Within 90 calendar days of the Permittee determining that any monitoring or corrective action program mandated by this Permit

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no longer satisfies the requirements of this Permit, or within 120 calendar days of the Permittee's receipt of a written determination of such inadequacy by EPA, the Permittee shall submit an application for a permit modification, pursuant to 40 CFR § 270.42, to make appropriate changes to the monitoring or corrective action program(s) (40 CFR § 264.98[h], § 264.99[j], and § 264.100[h]).

## MODULE VIII ATTACHMENTS

- Permit Attachment VIII-1: Maps of Locations of Groundwater Monitoring Wells of the Puntilla Waste Management Area and the Ground Burner Area.
- Permit Attachment VIII-2: Map of Locations of Groundwater Monitoring Wells of the Industrial Landfill Waste Management Area.
- Permit Attachment VIII-3: Puntilla Waste Management Area Groundwater Sampling and Analysis Plan.
- Permit Attachment VIII-4: Industrial Landfill Waste Management Area Groundwater Sampling and Analysis Plan.
- Permit Attachment VIII-5: RCRA Part B Permit Renewal Application Amendment, Volume III, Part 1 Groundwater Monitoring (March 3, 2000).
- Permit Attachment VIII-6: UCCLLC's Letter dated May 6, 1999.

## **MODULE IX - LAND DISPOSAL RESTRICTIONS**

- A. **BACKGROUND.** RCRA as amended by the Hazardous and Solid Waste Amendments of 1984 prohibits the continued land disposal of untreated hazardous wastes beyond specified dates, "unless the Administrator determines that the prohibition ... is not required in order to protect human health and the environment for as long as the wastes remain hazardous...." (RCRA §§3004(d)(1) and (e)(1). See also §3004(g)(5), 42 U.S.C. §6924(d)(1) and (e)(1). See also 42 U.S.C. §6924(g)(5)).
- B. **WASTE ANALYSIS.**
1. Pursuant to 40 C.F.R. § 264.13(a)(1), before the Permittee treats, stores, or disposes of any hazardous waste, the Permittee must obtain a detailed chemical and physical analysis of a representative sample of the waste. At a minimum, this analysis must contain all the information which must be known to treat, store or dispose of the waste in accordance with the requirements of 40 C.F.R. Parts 264 and 268 or with the conditions of this Permit.
  2. The Permittee shall comply with the waste analysis, notification, certification, and record keeping requirements of 40 C.F.R. § 268.7 whenever generating, treating, or managing a waste, which within the meaning of 40 C.F.R. Part 268, is a land disposal restricted waste ("LDR waste").
  3. If the Permittee determines whether a waste is a LDR waste based solely on his knowledge of the waste, all supporting data used to make this determination must be maintained on-site in the Facility's operating record. [40 C.F.R. §264.73].
- C. **TREATMENT/DISPOSAL AND TRANSPORT OF RESTRICTED WASTE**
1. Prior to land application, all hazardous waste shall be treated pursuant to the applicable treatment standards prescribed by 40 C.F.R. Part 268. Each batch of LDR waste treated will be sampled and analyzed to verify that the Part 268 treatment standards are met. The Part 268 treatment standards applicable to the LDR wastes generated at the Facility are specified in Permit Attachment II-1, the Waste Analysis Plan. LDR waste which does not meet the applicable Part 268 treatment standards will be sent off-site for treatment or disposal to an approved RCRA permitted treatment,

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storage, disposal facility. LDR waste sent off site must meet all the applicable requirements of 40 C.F.R. Part 268, including all notification, record keeping, certification and treatment standards.

The Permittee may also use other pretreatment methods for LDR waste as stated in 40 C.F.R. § 268.45, subject to EPA's review, approval and implementation of a permit modification pursuant to 40 C.F.R. § 270.41 and/or § 270.42, if required.

2. For each new shipment of LDR waste shipped off site for treatment/disposal, the Permittee must notify the recipient treatment/disposal facility in writing of the appropriate treatment standard set forth in Subpart D of 40 C.F.R. Part 268. If the Permittee routinely ships the same waste type to the same facility, the Permittee is only required to send the notification form once. The notice must include the following information:
  - (i) EPA Hazardous Waste Number;
  - (ii) The corresponding treatment standards;
  - (iii) The manifest number associated with the waste shipment; and
  - (iv) Waste analysis data, where available.
3. If the Permittee opts that a LDR waste which can be managed on-site in the Facility's Landfill or Surface Impoundment without further treatment, shall nevertheless be shipped off site for treatment/disposal, then for each such off site shipment of LDR waste the Permittee must submit, to the recipient land treatment/disposal facility, a notice and a certification stating that the waste meets applicable treatment standards. For the same type waste shipped to the same facility the Permittee is only required to complete the notice and certification form once, the first time the waste is shipped,
  - (a) The notice must include the following information:
    - (1) EPA Hazardous Waste Number;
    - (2) The corresponding treatment standards;

- (3) The manifest number associated with waste shipment; and
- (4) Waste analysis data, where available.

- (b) The certification must be signed by an authorized representative and must state the following:

I certify under penalty of law that I personally have examined and am familiar with the waste through analysis and testing or through knowledge of the waste to support this certification that the waste complies with the treatment standards specified in 40 C.F.R. Part 268, Subpart D and all applicable prohibitions set forth in 40 C.F.R. 268.32 and RCRA section 3004(d), 42 U.S.C. §6924(d). I believe that the information I submitted is true, accurate and complete. I am aware that there are significant penalties for submitting a false certification, including the possibility of a fine and imprisonment.

- D. STORAGE OF LDR WASTES. The Permittee may store LDR wastes in accordance with the conditions specified in 40 C.F.R. § 268.50(a), for up to one year unless EPA can demonstrate that such storage was not solely for the purpose of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal. (40 C.F.R. § 268.50(b)).

The Permittee may store LDR wastes beyond one year; however, the Permittee bears the burden of proving that such storage was solely for the purpose of accumulation of such quantities of LDR waste as are necessary to facilitate proper recovery, treatment, or disposal. (40 C.F.R. § 268.50(c)).

- E. LAND TREATMENT OR DISPOSAL OF RESTRICTED WASTES. The land treatment or land disposal of LDR waste at the Facility is prohibited unless the relevant waste is pretreated to below the applicable treatment standards prescribed by 40 C.F.R. Part 268, Subpart D including, but not limited to 40 C.F.R. §268.40 and 40 C.F.R. §268.48. (see paragraph C.1. above), or the waste is exempt under 40 C.F.R. § 268.1(c).

## ATTACHMENTS

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Attachment II-2	Inspection Schedule	II
Attachment II-3	Inspection Log Forms	II
Attachment II-4	Personnel Training	II
Attachment II-5	Contingency Plan	II
Attachment II-6	Spill Release Reporting Procedures	II
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Attachment II-8	<u>Union Carbide Caribe Inc., Puntilla Facilities,</u> <u>Puerto Rico, Dispersion Model Study</u> (May 1985) by Danish Hydraulic institute, (Final Report);  <u>100-Year Flood: Environmental and Human</u> <u>Health Impact Evaluation</u> (December 1985) by Union Carbide Environmental Technology Services;  <u>Puntilla Facilities, Puerto Rico Dispersion</u> <u>Study Status Report, Phase I</u> (January 1985), by Danish Hydraulic institute.	II
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**Attachment II-1**

**Waste Analysis Plan**

**Attachment II-2**

**Inspection Schedule**

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**Inspection Log Forms**

**Attachment II-4**

**Personnel Training**

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**Contingency Plan**

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**Spill Release Reporting Procedures**

**Attachment II-7**

**Emergency Plan**

**Attachment II-8**

**Dispersion Model Study  
100 Year Flood Plan**

**Attachment III-1**

**Closure Certification Report/Post Closure Plan for the  
Dewatered Sludge Landfill**

**Attachment III-2**

**Phase II RFI Report - Group III SWMUs;**  
**RFI Report - Group IV SWMUs (July 2001)**

**Attachment III-3**

**Management-Level Ecological Risk Assessment**  
**for SWMU No. 5, North Cooling Water**  
**Outlet Canal (November 28, 2000)**

**Attachment III-4**

**Scope of Work for a RCRA Facility Investigation (RFI).**

**Attachment III-5**

**Scope of Work for a Corrective Measures Study (CMS).**

**Attachment V-1**

**Industrial Landfill Drawings, RCRA-PB-D7  
(Run-on and Run-off Control)**

**Attachment V-2**

**Industrial Landfill Operating Plan**

**Attachment VI-1**

**Closure and Post-Closure Plan  
Industrial Landfill**

**Attachment VI-2**

**Closure and Post-Closure Plan  
Aeration Basin 2 (East)**

**Attachment VI-3**

**Revised Closure Plan for the Environmental  
Protection Division Storage Tanks and the  
Phenol Acetone Residue Storage Tanks**

**Attachment VI-4**

**Revised Closure Plan for the  
Energy Systems Unit Tanks**

**Attachment VI-5**

**Revised Closure Plan for the  
Container Storage Area/Warehouse Area**

**Attachment VI-6**

**Revised Closure Plan for the  
Ground Burners Area**

**Attachment VII-1**

**Closure Certification Report/Post Closure Plan for  
the Primary Solids Ponds**

**Attachment VII-2**

**Disposal of Impounded Dripolene and Primary Solids Ponds Sludge,  
Volumes I and II, March 1987.**

**Union Carbide Caribe, Inc. Ponce Site, Waste Stabilization Field Confirmatory Tests  
(August September, 1987).**

**Attachment VIII-1**

**Map of Locations of Groundwater Monitoring Wells of the Puntilla Waste Management Area  
and the Ground Burner Area**

**Attachment VIII-2**

**Map of Locations of Groundwater Monitoring Wells of the Industrial Landfill Waste  
Management Area**

**Attachment VIII-3**

**Puntilla Waste Management Area Groundwater Sampling and Analysis Plan**

**Attachment VIII-4**

**Industrial Landfill Waste Management Area Groundwater Sampling and Analysis Plan**

**Attachment VIII-5**

**RCRA Part B Permit Renewal Application Amendment, Volume III, Part 1 Groundwater  
Monitoring (March 3, 2000)**

**Attachment VIII-6**

**UCCLLC's Letter dated May 6, 1999**